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Nonfarm CONSUMPTION OF FLUID MILK AND CREAM

A REVISED SERIES OF STATISTICS

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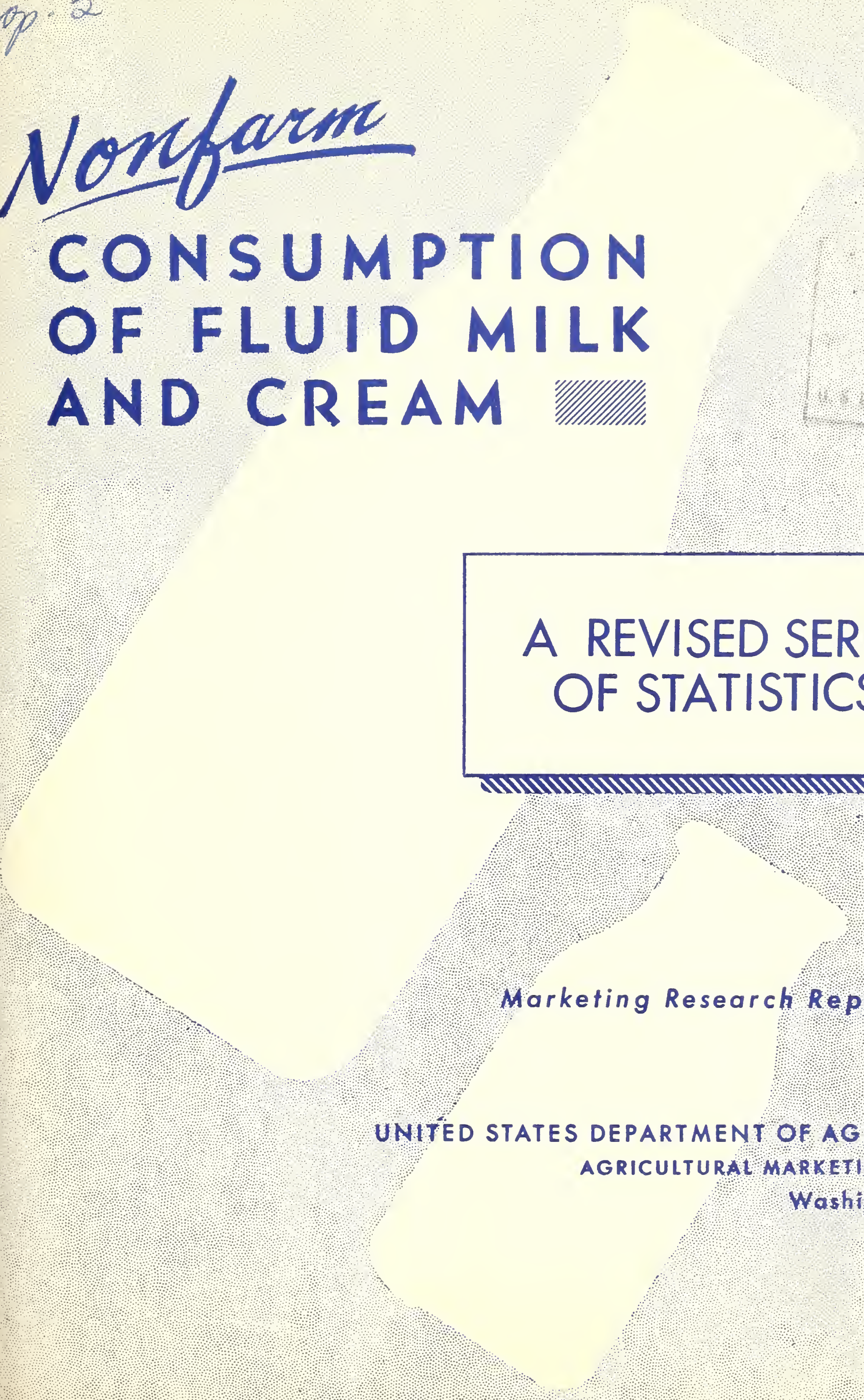
U. S. DEPARTMENT OF AGRICULTURE



Marketing Research Report No. 72

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
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PREFACE

The study reported in this publication was initiated for two purposes. The first of these was the construction of a benchmark estimate of the annual consumption of fluid milk and cream by the nonfarm population for the calendar year 1944. A benchmark was needed for checking and, if necessary, revising the previously published series of annual data showing consumption of fluid milk and cream in cities and villages in the United States. The benchmark indicated that a revision in the level of the series for 1944 should be made. After the level of the series was revised for 1944, the entire series from 1924 through 1950 was reviewed and certain changes were made in it. The second purpose was publication of estimates of the annual per capita consumption of fluid milk and fluid cream for each State and for many urban markets for which such information had not previously been available. This report embodies the revised series showing annual consumption of fluid milk and cream in cities and villages for 1924-50, the benchmark estimates for each State and for the United States, and the sample indications obtained from 114 separate urban milk markets, together with a discussion of the methods by which the sample indications were obtained and combined.

The study upon which the report is based was carried on under authority of the Agricultural Marketing Act of 1946 (RMA, Title II). This act authorizes the collection and dissemination of marketing information, including adequate outlook information on a market-area basis, for the purpose of anticipating and meeting consumer requirements, aiding in the maintenance of farm income, and bringing about a balance between production and utilization of agricultural products.

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NONFARM CONSUMPTION OF FLUID MILK AND CREAM

A revised series of statistics
(United States, 1924-50; urban markets, 1944)

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BACKGROUND

Fluid milk is a highly perishable product. It must be handled quickly and carefully from the time the cow is milked until the milk is delivered to the consumer. Public sanitation and quality of product are both involved.

Traditionally, the legal responsibility for sanitation in the production and handling of fluid milk has rested with local governing bodies such as municipal and county authorities, which developed permit and inspection systems as a means of enforcing sanitary requirements upon producers and distributors of milk. Marketing of fluid milk consequently developed on a local basis. This made difficult the collection of representative statistics on production and sale of fluid milk and cream, except as these occurred as byproducts of some phase of regulation of milk markets or in publications issued by milk producers' cooperative bargaining or marketing associations. Some municipal sanitation authorities attempted to obtain data on receipts and sales of fluid milk as byproducts of milk sanitation work. Returns were often incomplete or otherwise defective and statistics of consumption based on these data were subject to considerable error. Special studies were made in a few marketing areas to learn the average per capita rates of consumption in those areas and to learn why rates of consumption vary from family to family. These studies, although useful for such purposes, were too few to provide a representative sample.

With the establishment in 1933 of minimum milk price regulation at the producer level by the Federal and some State Governments, sales data for several defined marketing areas became available. In the early years of minimum milk price regulation, the data were not very reliable. By the end of 1937, both Federal and State action in this field had been upheld by courts of final appeal and these statistical reports became more useful and more reliable as sample indications of general changes in sales of fluid milk and cream.

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[1] This study, which is based on analysis of a large body of statistics, owes much to George H. Day, Florence Fogelson, and Mardy Myers, formerly employed as statisticians in the Agricultural Estimates Division, AMS, who made valuable contributions to it.

The problem of population then became the most serious stumbling block to preparation of annual per capita consumption rates of fluid milk in many sales areas. In more recent years, and particularly since 1937, audited sales data have been available for a growing number of urban milk markets under Federal orders issued by the United States Department of Agriculture. Only a few of these orders were effective in 1937, but in the spring of 1953 about 48 were effective in markets whose total annual sales of whole milk were in excess of 12 billion pounds. This group of markets is the best current source of information concerning changes in sales of fluid milk and cream. In addition, data on sales of milk and cream are now published by some of the States which regulate prices of fluid milk at producer or producer and distributor levels.

In September 1943, as part of the wartime food-management program, War Food Order 79 [2] was issued. Its chief purpose was to help maintain the output of manufactured dairy products at levels high enough to supply essential military and civilian needs. This was done by limiting, through quotas, the expansion of sales of fluid milk and cream in large urban marketing areas. One hundred thirty-eight local sales areas were established under this program. Data from 114 of these areas were sufficiently accurate and comprehensive to yield indications of consumption of fluid milk and cream in a large and well-distributed sample of urban milk markets in the United States for 1944.

PART I

MATERIALS AND METHODS USED IN CONSTRUCTING THE ESTIMATE OF THE ANNUAL CONSUMPTION OF FLUID MILK AND CREAM BY THE NONFARM POPULATION FOR 1944

The problem of estimating the annual aggregate and per capita consumption of fluid milk and cream in cities and villages in this country involves both the absolute level of the series and year-to-year changes in in the series. It is only in a comparatively recent period, at most for about 10 years back, that dependable sales figures have been available from sample areas to provide a basis for estimating year-to-year change in the series for the country as a whole. Until the WFO-79 sales data became available there had been no dependable independent benchmark data for revising the absolute level of the estimates in the interest of greater accuracy.

In the 1920's and the early thirties much effort was directed toward ascertaining the quantity of fluid milk and cream consumed annually in cities, town, and villages. The pioneer work in this field was done by

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[2] Originally known as Food Distribution Order 79.

T. R. Pirtle, who in the early twenties was employed in the Dairy Division of the Bureau of Animal Industry and later in the Division of Dairy and Poultry Products, Bureau of Agricultural Economics. The data on annual consumption of fluid milk and cream in cities and villages were originally published in a "Handbook of Dairy Statistics," issued by the United States Department of Agriculture. These estimates of consumption, both regional and national, were made on the basis of reports from city boards of health. Earlier data reported by such boards were mainly estimated receipts of milk and cream at city markets for disposition as fluid milk and cream. In later years, some attempt was made to obtain a utilization breakdown of these receipts.

An analysis was made of the series in the early thirties. As the results indicated that the level for the preceding years was too high, an adjustment to a lower basis was made for 1929-31. The regional and national consumption totals thus obtained were projected forward on the basis of year-to-year change in total consumption as shown by board of health reports. Yearly per capita figures were calculated by dividing quantities consumed by the regional nonfarm population. After 1938, no further reports from boards of health in larger cities were obtained, and the series was projected forward on a national basis only and with limited basic information as a guide.

In the middle forties, concern was felt both within and outside the Department of Agriculture over the level of consumption indicated by this series. Available check data appeared to indicate that the level of the series might be too high. But the check data were inadequate to support either a firm conclusion or a measure of the upward bias in the series. The Agricultural Marketing Act of 1946 (RMA, Title II) provided an opportunity to construct an independent benchmark estimate against which the absolute level of the series for a given year could be checked. The major source of data was the body of statistics on receipts and sales of fluid whole milk, fluid cream, and skim milk products in more than 100 large fluid milk markets covering more than 60 million people. These were collected in the administration of War Food Order 79 for the year 1944.

After careful analysis this material was combined with other data on sales of fluid milk and cream in villages, towns and small cities. This yielded an independent estimate of annual consumption of fluid milk and cream by the nonfarm population of the country for 1944. This benchmark figure of 38.4 billion pounds was substantially lower than the figure for 1944 in the published cities and villages series. However, the new level appears to be justified on the basis of the extensive factual information assembled in the study of 1944 information.

When the corrected level of the series had been determined for 1944, the entire series from 1924 to 1950 was reviewed. Analysis of available data indicated that the rate of gain in the old series between 1940 and 1944 was too great. In the old series, the relation between 1944 and 1940 in terms of the aggregate quantity of milk consumed was 1.28, or a gain of 28 percent. The revised series shows a gain for the same period of 25 percent. It was further determined that no satisfactory basis existed for making changes in the series between 1924 and 1940 other than correction for level. For this period the revised series exhibits the same proportionate year-to-year change as did the old series but at the new lower level. For 1944-50 some minor changes were made in the year-to-year relationships in the series. The major change was correction to the new level.

Procedure

Three independent sources of data were available for construction of the benchmark estimate for 1944 of annual consumption of fluid milk and cream by the nonfarm population. These were: (1) Sample estimates for 114 large urban markets, (2) sample estimates for 1,860 small cities, towns and villages, obtained from schedules sent to local health officers, and (3) estimates of annual consumption by that portion of the military forces resident in continental United States and eating out of military food supplies.

The parent universe, which was the United States resident nonfarm population, was broken down into three subuniverses. One was that segment of the nonfarm population living in cities and in towns contiguous to cities. The WFO-79 sample indications, expressed in per capita terms, were allocated to this subuniverse and expanded to obtain State-by-State estimates of the 1944 consumption of fluid milk and cream in this part of the universe. The second large subuniverse was that segment of the nonfarm population living in small cities (under 10,000 in population) and in towns and villages. The sample estimates for 1,860 small cities, towns, and villages were allocated to this subuniverse and expanded to obtain State-by-State estimates of the 1944 consumption of fluid milk and cream in this part of the universe. A similar method was followed for the relatively small subuniverse which consisted of United States resident military forces in 1944 who were eating from military food supplies.

Population in Each Subuniverse

The various sample and universe populations for the calendar year 1944 are as follows: Total resident population July 1, 1944, 132,885,000. The farm population is 25,495,000 and the nonfarm population 107,390,000. The subuniverse for expansion of the WFO-79, or large city sample indications, contains 67,101,000 people. The sample itself contains 61,200,000 people. The subuniverse for expansion of the Health Officer survey sample indications contains 36,239,000 people. The Health Officer sample contains 10,200,000 people. The number of military people eating from military food supplies in 1944 is estimated at 4,050,000.

As a State-by-State breakdown of the two major nonfarm subuniverses was needed and as this had to be derived from the total civilian population of each State on July 1, 1944, a State breakdown of the farm population was needed in order to exclude it from the subuniverse. This was obtained by taking the January 1, 1944 and 1945, estimates of farm population by States adjusted for seasonality as guides. The State farm populations were subtracted from the State civilian populations to yield the combined nonfarm civilian universe for each State. This universe was then divided into two segments as follows: The 1940 census yielded for each State the percentage relationship of the nonfarm civilian population living in places under 10,000 population to the total nonfarm civilian population. The broad assumption was made that the 1940 percentage relationship also applied in 1944. This may involve an error, but the effect of this error would be chiefly to qualify the population division, for sample expansion purposes, above or below the 10,000 level, depending upon how these percentage relationships, in fact, had changed between 1940 and 1944. As the division of the universe into two subuniverses for purposes of sample expansion required a judgment decision not subject to precise determination as to location of the dividing line, this error was not regarded as serious.

Data available within the Agricultural Marketing Service indicated that in 1944 about 1.8 million of the Armed Forces were eating from civilian food supplies. This group was added to the two civilian groups in the ratio of 1 to each community under 10,000 in population to 5 in each community larger than 10,000. This was a rough estimate based upon discussions with informed personnel in the Departments of the Army and the Navy. Proration among States was made on a directly proportionate basis for want of a better measure.

Population in the WFO-79 Sample Areas

A major problem in estimating per capita consumption of fluid milk in individual WFO-79 sales areas was that of estimating the 1944 milk-consuming population in these areas. The chief sources of data were the description of the sales area and three population releases issued by the Bureau of the Census. These latter were the decennial census as of April 1940, and the March 1, and November 1, 1943, civilian population estimates by counties, based on holdings of War Ration Books 2 and 4. The percentage changes in the population of the county (or counties) most closely similar to the defined sales area between April 1, 1940, and March 1 and November 1, 1943, were determined. These percentages were applied to the April 1, 1940, population of the sales area to estimate the population of the area on these two dates. The periods between March 1 and November 1, 1943, and November 1, 1943, and July 1, 1944, were both 8 months. This made it possible to obtain an extrapolated figure for the July 1, 1944, population of the sales area by taking the difference between the March 1 and November 1, 1943, figures and adding this difference to (or subtracting it from) the November 1, 1943, population. The July 1, 1944, estimate was added to the November 1, 1943, estimate and half of this sum was taken. This figure, adjusted by an estimate of change in the farm population of the area, which was very small in most cases, and by an estimate of military personnel in the area on leave, was taken as the estimated milk-consuming population of the sales area in 1944.

The basic assumption made was that if the population of the sales area increased or decreased between March 1 and November 1, 1943, the same tendency could be expected to extend into 1944, although at a diminishing rate as migration for the country as a whole was less in 1944 than in 1943. The extrapolation was limited to July 1, 1944, to allow for this tapering off. But as the estimating procedure was subject to error, it was held prudent to tie the 1944 population estimate in some way to the nearest absolute measure for the area, which was the November 1, 1943, census estimate. The method is simple in application. It was adopted after considerable time was spent in attempting to work out more involved estimating procedures which appeared to offer no better results. Informal discussion of the method with population experts in the Bureau of the Census brought forth the comment that if the estimates were tied to the November 1, 1943, estimate, the resulting series of estimates could not be improved by any generalized method. Of the total of 114 areas, decreases occurred in 63 and for this number, the 1944 estimate of population is lower than the census figure for November 1, 1943. None of the March 1 to November 1 gradients was very steep. The total number of people in the WFO-79 sample areas is 61.2 million.

Most of the individual sales areas were clearly delineated except for parts of fringe areas. In most of these cases, errors with respect either to population or to sales in certain parts of the market fringe would affect the total population or the total sales in the area very little. The sales areas were defined, either initially or by amendment, with the aid of local distributors who knew the areas well.

Sales Data for the WFO-79 Sample Areas

It became apparent that sales data submitted by the market agents, with only a few exceptions, did not reflect total consumption in the controlled areas. Fortunately, in many cases, the missing sales categories were small both in absolute quantity and in proportion of total sales in the area.

These were chiefly certain sales exempt from control under WFO-79, such as sales to schools and hospitals, sales to industrial users, sales of small producer-distributors, and what may be called "leakage" or incomplete quota sales reports. Sales to schools and hospitals were exempt from control in almost all areas after September 1, 1944. For the period during which sales to schools and hospitals were exempt from control, the data appeared separately under the general heading, "Deliveries Not Subject to Quotas." These data were frequently not broken down by products. The proportions of whole milk, milk drinks, and cream in quota sales were applied to sales to schools and hospitals. This somewhat overstates sales of cream for this category, but as these exempt sales seldom exceeded 5 percent of total sales in the area (they were subject to quota for nearly two-thirds of the year) this error in proportion is small enough to be neglected. Sales to industrial users such as local bakeries, confectioners, soupmakers, and other food processors were listed under "Sales to Other Persons in the Area." These sales were added to quota sales and are therefore included in the estimates of consumption.

Sales made by small producer-distributors were exempt from control. Among the different areas, exemptions ranged from the equivalent of 100 quarts of milk daily to 400 quarts. This sales category was the most difficult to estimate, but in practically all markets, exempt sales of this kind represented at most 2 percent of total sales. Correspondence with market agents and with local health department authorities, plus some actual market visiting and personal inquiry, formed the basis for the estimates that were made.

Reported quota sales make up the most reliable figure for the WFO-79 marketing areas. Control of these sales was the purpose of the order and the greatest single emphasis in its administration was directed toward obtaining complete reports on a product pound basis. For many of these areas good indications of butterfat test of milk sold or butterfat test of milk received or of either were not available and had to be obtained by supplementary correspondence with market agents, distributors operating in the area, local milk-inspection officials, and other sources.

As sales of fluid whole milk vary relatively little from season to season in markets not subject to substantial tourist or summer vacation movements, the completeness of reported sales (month by month) could be evaluated by setting up daily sales figures for each month and noting the month-to-month variation. Market agents furnished with each monthly quota summary an estimate of the proportion of total sales in the market that was represented by the summary. For out-of-line months adjustments were made to bring the sales up to estimated 100-percent completeness.

In some 40 marketing areas, reported monthly quota sales varied considerably. In these markets, a 4-month sample was selected -- usually the high month in each quarter. This 4-month sample, converted to a daily basis, was examined for incompleteness after consideration of both the market agent's estimate of percentage of market covered and variation in sales and number of handlers included in the report. Estimated remaining incompleteness was expressed as a percentage and the average percentage for the four quarters was calculated. The sales were converted to a daily basis, increased to an estimated 100 percent, and an annual aggregate was calculated.

As a final adjustment, handler receipts of milk and total sales, both quota and exempt, were reconciled. In almost all cases, all milk received by handlers was not fully accounted for in the utilization reports. This was construed as "leakage" and an estimated adjustment was added to quota sales of milk unless analysis of the work of the market agent indicated that this procedure was likely to result in upward bias in the consumption indicated. The procedure may have injected a small upward bias into some of the individual WFO-79 indications.

In examining and adjusting the reports of sales of cream, the same estimates of market incompleteness as in the case of fluid whole milk were used. Handlers' reports to market agents were complete or incomplete for both milk and cream rather than for either item separately. Ordinarily, sales of fluid cream vary considerably with the seasons, but this variation was sharply curtailed by the 75-percent quota imposed. Actual sales under the order tended to fluctuate more because of tightness in available supplies or of transfers from sales of cream to sales of milk than in relation to more normal seasonal patterns.

Sales of milk drinks were more difficult to handle, so far as quantities and tests were concerned, than either whole milk or cream. The byproducts group included cottage cheese, plain skim milk, buttermilk, and flavored skim milk drinks. Cottage cheese was declared exempt for the October-December 1944 quarter. As the summary reports often showed only the total quantity of byproducts and no breakdown, it was necessary to go to the October-December 1944 quarter for many of the marketing areas to obtain sales figures which excluded cottage cheese. Considerable estimating was necessary in order to arrive at the total quantity of milk drinks sold during the year in most of the markets, as compared with sales of whole milk. In most of the markets, the milk equivalent of skim milk drinks was less than 6 percent of sales of whole milk.

Health Officer Survey

The 1944 survey by the United States Department of Agriculture is based on 1,860 reports from local health officers. These reports covered a rough description of the local market, its population, and total daily sales of fluid milk and cream with separation of producer-dealer, merchant-dealer, and other sales. Data on changes in population from July 1, 1943, to July 1, 1944, were requested to call specific attention to the population estimate. The schedules, addressed to "Health Officer," were sent to about 8,000 towns and villages. The return of usable schedules was about 23 percent of the total number sent out. The Health Officer sample contains about 10.2 million people. This is 28 percent of the 37 million people in the subuniverse to which the sample indications were expanded. The distribution of returns by States was well correlated with the total population by States, with allowance for distribution of population by communities of different size within States. It is likely that most of the completed schedules were filled out on the basis of telephone inquiry to or personal call on one of the local milk dealers. In cases in which several producer-dealers or merchant-dealers were involved, it is likely that many schedules were filled out on the basis of indirect information whereby one dealer or producer-dealer would roughly define the market and estimate sales of milk and cream by sellers other than himself.

The population data for these areas were estimated roughly, and the sales data were probably based, in most cases, on rather casually made estimates of sales. This was more likely to be the case when several sellers were involved. Examination of individual reports showed considerable variation in consumption rates within States. State averages showed rough correlation, as would be expected, with latitude and with the importance of dairying within the State. For the entire period since 1941, the absolute level of consumption as indicated by the Health Officer survey for small communities has been below the absolute consumption level for the entire nonfarm population indicated for the country as a whole, but it is recognized that the absolute level of this series has been too high.

Is there any likelihood that the Health Officer survey is subject to statistical bias? There is no definite answer to this question. The sales estimates may be incomplete but the population estimates may also be incomplete. The sales estimates may be rounded up. Very many of the sales estimates, even for very small communities, were rounded to the nearest 50 or nearest 100 quarts per day. The definition of market is more likely to be incomplete than complete.

The populations reported showed a general tendency to exceed the population for the named areas according to the 1940 Census of Population. Many towns and villages probably lost population between 1940 and 1944 from the combined effects of migration and the military draft. At first glance, this would seem to indicate upward bias in the estimates of market population and consequently downward bias in the estimates of consumption. But the milk markets in many, and perhaps in most cases, must have exceeded the limits of the named areas and the comparison with 1940 population for a given town or village would not be for them a true comparison. Furthermore, any conclusion that upward bias in population existed in some individual markets would be a general conclusion. The number of such markets or the particular markets so affected would be unknown and no measure of the magnitude of the bias could be obtained. It was decided to use the reported populations unless they were clearly out of line.

The Military Consumption Data

Some information was obtained from the Department of Defense as to the average consumption levels for military personnel in 1944. It appeared that average daily consumption varied considerably among installations. In an effort to avoid almost endless work in calculating average daily consumption rates for fluid milk and cream at a large number of major military installations from uncertain estimates of both products consumed and average daily numbers at messes, and so on, it was decided to apply an overall estimate to all installations. This was taken at approximately one pint per person per day as the milk equivalent of all fluid milk, fluid cream, and milk drinks consumed at messes, canteens, and other points. The total number of military personnel in 1944 was allocated among States and State-by-State estimates of aggregate annual consumption were calculated.

The estimates of aggregate consumption in the three categories in 1944 were totaled for each State (and the District of Columbia) and yielded the benchmark estimate of annual aggregate consumption of fluid milk and cream by the nonfarm population. This was 38.4 billion pounds. (See table 1.) It will be seen that the population of the subuniverse which is based upon the WFO-79 sample is nearly twice as large as that based upon the Health Officer survey. The military component represents less than 4 percent of the universe population. The ratios of consumption of fluid cream to total consumption, at approximately 14 percent, are closely similar for the two major subuniverses. The corresponding ratio for consumption by the military is 11 percent. The per capita annual consumption rates for the three components of the total estimate are shown in table 2.

Table 1.-Estimated population and aggregate consumption [1] in the three subuniverses and the nonfarm population, 1944

Subuniverse	Population	Milk and milk drinks	Cream	Total
	Thousands	Million pounds	Million pounds	Million pounds
WFO-79	67,101	19,317	3,178	22,495
Health Officer	36,239	12,341	1,983	14,324
Military	4,050	1,440	160	1,600
Nonfarm population	107,390	33,098	5,321	38,419

[1] In milk equivalent terms, calculated on fat solids basis.

Table 2.-Estimated per capita consumption [1] in the three subuniverses and the nonfarm population, 1944 [2]

Subuniverse	Milk and milk drinks	Cream	Total
	Pounds	Pounds	Pounds
WFO-79	284	46	330
Health Officer	335	54	389
Military	356	39	395
Nonfarm population	304	49	353

[1] Calculated on the basis of the civilian population figures adjusted to allow for underenumeration.

[2] In milk equivalent terms, calculated on fat solids basis.

PART II

REGIONAL, DIVISIONAL, AND STATE BREAKDOWN OF THE AGGREGATE AND PER CAPITA CONSUMPTION OF FLUID MILK AND CREAM BY THE NONFARM POPULATION IN 1944

In table 3 are set forth the annual per capita rates of consumption for whole milk and milk drinks, fluid cream expressed as milk equivalent, and all fluid products in 1944, by regions and divisions. The North and West are similar in total consumption and in the relation of consumption of milk and cream to total consumption. Both areas are well above the level of consumption for the South. Consumption of fluid cream was higher in the North Central States than in the Northeastern States, the West, and the South. The level of consumption of fluid milk and cream was approximately the same for five of the nine geographic divisions, falling within the 368- to 375-pound range annually. In this group were the Middle Atlantic, the East North Central, the West North Central, the Mountain, and the Pacific States. Variation in the level of milk consumption alone in this group of divisions was somewhat greater; consumption ranged from 301 to 331 pounds annually. Variation within this group in the level of consumption of fluid cream, expressed in milk equivalent terms, was from 44 to 65 pounds annually.

New England showed the highest consumption of milk and the highest total consumption. The East and West North Central States were almost identical in leading all other divisions in consumption of fluid cream. Consumption of cream was the same in the New England and Middle Atlantic States at 44 pounds annually in milk equivalent terms and the same in the South Atlantic and East South Central States at 29 pounds annually.

The East South Central and the South Atlantic States had virtually the same per capita consumption levels for fluid milk and cream combined. The consumption levels for these divisions were the lowest among the nine geographic divisions in the country. For fluid milk taken alone, the lowest level occurred in the East South Central States but consumption in the South Atlantic States was only one pound per person per year higher than in the East South Central States.

On a relative basis the highest consumption level for fluid milk was 33 percent above the lowest consumption level. The highest consumption level for fluid cream was 124 percent, or 1¼ times the lowest consumption level. These comparisons are affected by differences in the butterfat test of milk receipts. As the tests of milk in the Southern States are higher than in the Northern States, the differences in consumption levels are increased somewhat in converting consumption levels of milk and cream as products to milk equivalent terms.

Table 4 contains the estimates of annual per capita consumption of fluid milk, fluid cream, and all fluid products in 1944 by divisions and States. The five leading States in total consumption, in descending order were Minnesota, Utah, Vermont, North Dakota, and Maine. Utah, Vermont, and Maine led in consumption of milk. Massachusetts, Connecticut, and New York were tied for fourth place. The five leading States in consumption of cream were Minnesota, Illinois, Nebraska, South Dakota, Table 3.-Per capita consumption of fluid milk and cream by nonfarm population by regions and divisions, expressed in pounds of milk equivalent, 1944

Area	Milk and milk drinks	Cream	All fluid products
	Pounds	Pounds	Pounds
Region:			
North	321	54	375
South	264	32	296
West	312	58	370
Northeastern States	335	44	379
North Central States	306	65	371
South Atlantic States	261	29	290
South Central States	266	35	301
Division:			
New England	347	44	391
Middle Atlantic	331	44	375
East North Central	308	65	373
West North Central	301	64	365
South Atlantic	261	29	290
East South Central	260	29	289
West South Central	270	39	309
Mountain	317	51	368
Pacific	310	60	370
United States	304	49	353

and North Dakota. The equivalent aggregate quantities of fluid milk, milk equivalent of fluid cream and of fluid milk and cream combined, which were consumed in 1944 by the nonfarm population, are shown in appendix table 12, page 35.

Table 4.-Per capita consumption of fluid milk and cream by nonfarm population by divisions and States, expressed in pounds of milk equivalent, 1944

Division and State	Milk and milk drinks	Cream	All fluid products
	Lb.	Lb.	Lb.
Maine	358	50	408
New Hampshire	343	47	390
Vermont	375	54	429
Massachusetts	349	43	392
Rhode Island	307	47	354
Connecticut	349	44	393
New England	347	44	391
New York	349	47	396
New Jersey	326	38	364
Pennsylvania	307	43	350
Middle Atlantic	331	44	375
Ohio	297	56	353
Indiana	304	56	360
Illinois	307	81	388
Michigan	309	65	374
Wisconsin	342	58	400
East North Central	308	65	373
Minnesota	335	97	432
Iowa	325	65	390
Missouri	256	44	300
North Dakota	338	76	414
South Dakota	315	78	393
Nebraska	315	78	393
Kansas	302	45	347
West North Central	301	64	365
Delaware	299	35	334
Maryland	285	29	314
District of Columbia	270	55	325
Virginia	241	31	272
West Virginia	271	40	311
North Carolina	257	20	277
South Carolina	245	21	266
Georgia	234	19	253
Florida	287	29	316
South Atlantic	261	29	290
Kentucky	283	38	321
Tennessee	277	26	303
Alabama	237	23	260
Mississippi	230	35	265
East South Central	260	29	289
Arkansas	260	38	298
Louisiana	257	33	290
Oklahoma	278	42	320
Texas	274	41	315
West South Central	270	39	309
Montana	305	56	361
Idaho	339	47	386
Wyoming	310	61	371
Colorado	297	50	347
New Mexico	286	52	338
Arizona	313	39	352
Utah	376	55	431
Nevada	321	63	384
Mountain	317	51	368
Washington	341	63	404
Oregon	338	50	388
California	300	61	361
Pacific	310	60	370
United States	304	49	353

The revised estimate of the aggregate quantity of fluid milk and cream, expressed in milk equivalent terms, which was consumed in 1944 by the nonfarm population of the United States was 38.4 billion pounds. Direct comparison of this figure with the 1944 estimate in the unrevised cities and villages series (43.0 billion pounds) cannot be made because the two figures are not completely comparable. The formerly reported estimate of annual consumption of fluid milk and cream by the total population of the United States showed a gap, in that the farm component covered only consumption on farms on which milk was produced. This information was obtained from quarterly reports of dairy correspondents and estimates of population on farms that had milk cows. No estimates were made of consumption of milk and cream on farms on which no milk was produced. It was presumed that estimated nonfarm consumption was sufficiently high to offset consumption on farms on which no milk cows were kept. When the estimate of consumption in 1944 for this segment of the population is removed from the old cities-and-villages figure for 1944, the net unrevised estimate for the nonfarm population becomes 41.8 billion pounds. This is the figure that can be directly compared with the new and revised estimate. The difference is 3.4 billion pounds and the revised estimate is 8 percent lower than the net unrevised estimate.

PART III

REVISION OF THE CITIES AND VILLAGES SERIES, 1924-50

With the adoption of the 1944 revised estimate, the entire series from 1924 to 1950 was reviewed. Analysis of available data indicated that the increase in the old series between 1941 and 1944 was somewhat too large. Sample sales data from Federal order markets and from markets under State milk price regulation provided the basis for reducing somewhat the annual increases in consumption of fluid milk and cream between 1941 and 1944. The correction can be illustrated by comparing the differences between the revised series and the old series in these two years. The revised series for 1944 is 4.6 billion pounds less than the old series but 3.3 billion pounds less for 1941. Table 5 shows the revised series, the unrevised series, and the difference between them for each year from 1924 to 1950. The old series, between 1924 and 1940, inclusive, has been revised in level only and not in year-to-year change. This was because no satisfactory basis, in the form of new annual sales or consumption data, could be found for making changes in the series other than correction for level. For 1944-50 only minor changes were made in the year-to-year relationships in the series. The major change for this period was correction to a new level.

Table 5.-Estimated consumption of fluid milk and cream by nonfarm population, unrevised and revised series, 1924-50

Year	Series		
	Unrevised series	Revised series	Difference 1/
	Billion pounds	Billion pounds	Billion pounds
1924	25.6	28.0	2.4
1925	26.3	28.8	2.5
1926	27.0	29.6	2.6
1927	27.6	30.3	2.7
1928	28.3	31.1	2.8
1929	29.3	32.2	2.9
1930	29.2	32.1	2.9
1931	28.6	31.4	2.8
1932	28.8	31.6	2.8
1933	28.5	31.3	2.8
1934	26.9	29.5	2.6
1935	27.9	30.6	2.7
1936	29.0	31.8	2.8
1937	29.5	32.3	2.8
1938	29.6	32.4	2.8
1939	30.2	33.1	2.9
1940	30.6	33.5	2.9
1941	31.6	34.9	3.3
1942	34.8	37.6	2.8
1943	37.5	41.0	3.5
1944	38.4	43.0	4.6
1945	40.7	46.0	5.3
1946	42.2	47.0	4.8
1947	41.1	45.0	3.9
1948	40.6	44.5	3.9
1949	41.2	45.0	3.8
1950	42.2	46.0	3.8

1/ See discussion of difference on page 14.

The peak level of annual per capita consumption by the nonfarm population was reached in 1945 at 373 pounds. This level was 26 percent higher than in 1935-39 and 18 percent higher than the pre-World War II peak which occurred in 1929. Table 6 indicates that per capita consumption by the nonfarm population increased rapidly during the war years compared with the small changes, on the average, during the prewar period. This is not surprising when it is considered in the light of wartime shortages of goods and services that compete with fresh milk for the consumer's dollar and the increases in per capita real income during the period. The decline in the level of per capita consumption after 1945 is rather sharp. Nearly 60 percent of the 73-pound gain in consumption which occurred between 1940-41 and 1945 was lost by 1950. Slight increases above the 1950 level occurred in 1951 and 1952. The level of consumption of fluid milk and cream in 1952 was only 5 percent higher than that previously published for 1929. This might seem at first glance to be a rather small gain for a 23-year period, which was characterized in its latter half by conditions of full employment and high consumer income. The gain in consumption of fluid milk is undoubtedly greater than 5 percent because per capita consumption of fluid cream has declined.

Table 6.-Per capita consumption of fluid milk and cream by nonfarm population, 1924-53

Year	Consumption	Year	Consumption
	Pounds		Pounds
1924	304	1939	298
1925	306	1940	297
1926	308	1941	302
1927	308	1942	326
1928	310	1943	343
1929	317	1944	353
1930	311	1945	373
1931	303	1946	367
1932	305	1947	347
1933	302	1948	333
1934	282	1949	331
1935	289	1950	329
1936	297	1951	331
1937	298	1952	333
1938	295	1953	331

For several years before World War II, it was assumed, in the absence of conclusive data, that of the total milk equivalent of fluid milk and cream consumed, about 80 percent was whole milk and milk drinks and 20 percent was fluid cream. Data from a sample of urban milk markets indicate that in the last year or two the ratios were of the order of 84 percent for whole milk and milk drinks and 16 percent for the milk equivalent of fluid cream, including milk and cream mixtures, such as half-and-half or cereal cream. This is a 20-percent decline in consumption of cream; it indicates that per person consumption of fresh milk as such has increased substantially more since 1929 than the 5 percent mentioned above. It works out to just about double this amount, or 10 percent. (See table 7.)

Similarly, in comparison with 1935-39 consumption of milk per person has increased substantially more than the 13-percent gain indicated for milk and the milk equivalent of cream taken together. This works out to about 19 percent for whole milk and milk drinks. Per person consumption of fluid cream in milk equivalent terms declined 10 percent between 1935-39 and 1952 and 19 percent between 1929 and 1952. It should be emphasized that these data are for the nonfarm rather than for the total population and also that the breakdown between milk and cream for 1929 and for 1935-39 is an assumption that looks reasonable in light of the rather scanty data available for those years. The breakdown for 1952 has a much broader basis of support in reported milk-market statistics.

Table 7.-Per capita consumption of fluid milk and cream as milk equivalent, by nonfarm population, average 1935-39, annual 1929 and 1952

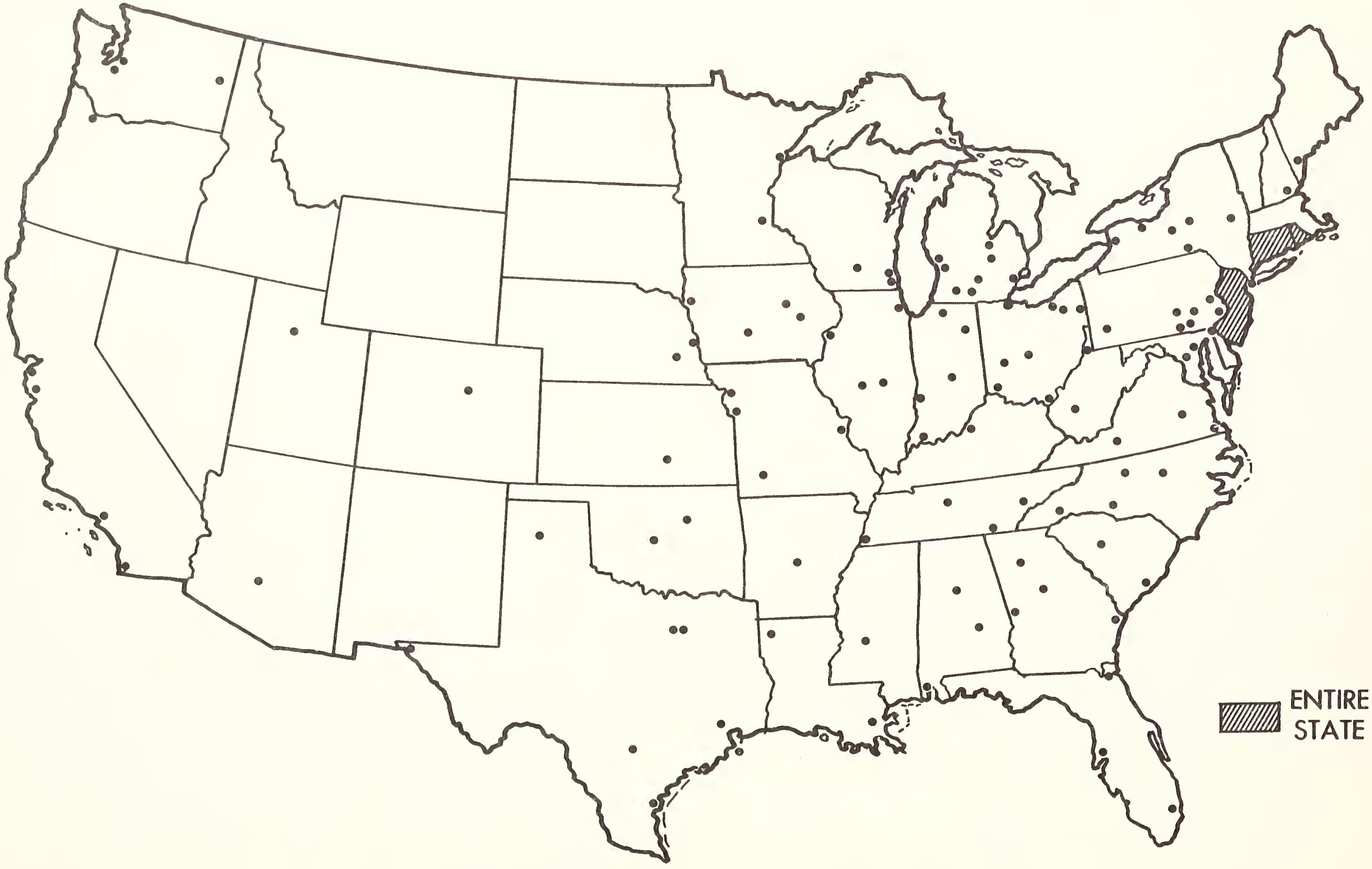
Period	Per capita consumption			Percentage of total milk equivalent	
	Milk and milk drinks	Cream	Total	Milk and milk drinks	Cream
	Pounds	Pounds	Pounds	Percent	Percent
Average 1935-39	236	59	295	80	20
1929	254	63	317	80	20
1952	280	53	333	84	16

PART IV

CONSUMPTION LEVELS IN URBAN MARKETS, 1944

Figure 1 shows the geographical location of the 114 sample areas discussed in this report. It can be seen that the distribution of the sample areas is similar to the distribution of metropolitan areas throughout the country. No control areas were established in North Dakota, South Dakota, Montana, Idaho, Wyoming, New Mexico, and Nevada. About 80 percent of the sample areas are located east of the eastern boundaries of the Great Plains States, beginning with North Dakota and running south to Texas. The 1940 census indicated that 82 percent of the urban population of the country was located east of this line. The distribution of the sample areas east of the Plains States is good in relation to the distribution of urban population throughout this part of the country. The sample in the Plains and Mountain States is weak, except in Texas. It is a large-city sample and there are very few large cities in the Plains and Mountain States.

LOCATION OF 114 MILK MARKETING AREAS COVERED IN 1944 STUDY OF FLUID MILK AND CREAM CONSUMPTION



U. S. DEPARTMENT OF AGRICULTURE NEG. 801-54 (5) AGRICULTURAL MARKETING SERVICE

Figure 1

The frequency distribution of marketing-area populations is shown below:

Thousands	Number
Under 100	23
100-199	37
200-299	13
300-399	9
400-499	7
500-599	5
600-699	1
700-799	3
800-899	3
900-999	0
1,000-1,999	7
2,000-2,999	2
3,000-3,999	1
4,000-4,999	2
-8,250-	1
Total	114

It is apparent that this is a reverse J-shaped distribution, with the high frequencies at the lower end of the population scale. The two smallest population classes contain 60 of the 114 marketing areas, or 53 percent of the cases in the entire sample. The total population represented by these two classes, however, is 7,380,000, or only 12 percent of the population in the sample. The five largest population classes contain 13 of the 114 marketing areas, or 11 percent of the cases. But the total population represented by these five classes is 59 percent of the population in the sample. This distribution is similar to the distribution by size of the 140 metropolitan districts, as shown in the 1940 population census. Metropolitan districts are not exactly the same in outline as fluid milk markets but they are similar, as both are the result of similar aggregations of population.

Character of the Distributions of Consumption Rates

Figures 2 through 7 show the frequency distributions of the 114 markets by daily per capita rates of consumption. These fall into two groups which represent the daily rates of consumption of fluid whole milk, fluid cream, and skim-milk items, first as products and then as milk equivalents, fat solids basis. The distribution of consumption rates for skim-milk items in milk equivalent terms was omitted because it is practically identical with the distribution of consumption of skim-milk items in terms of product.

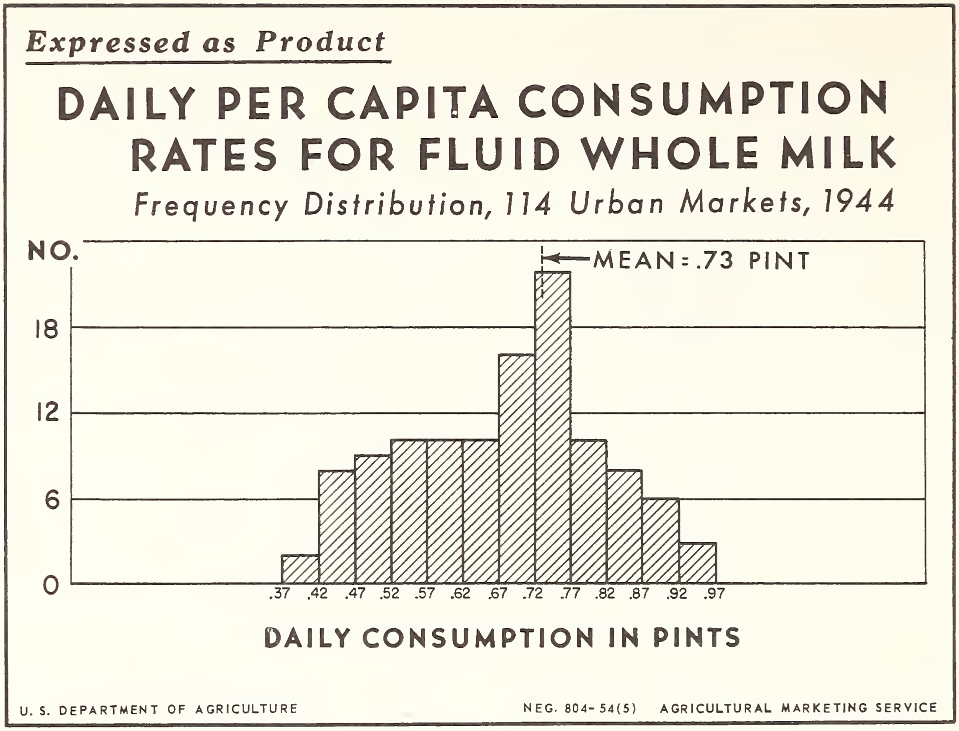


Figure 2

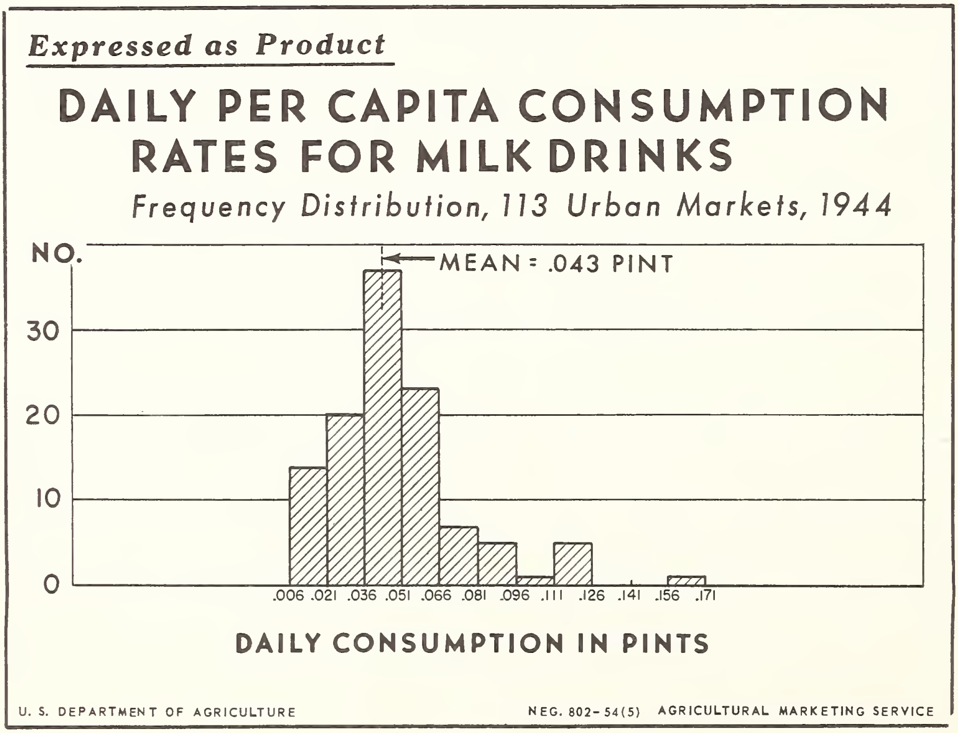


Figure 3

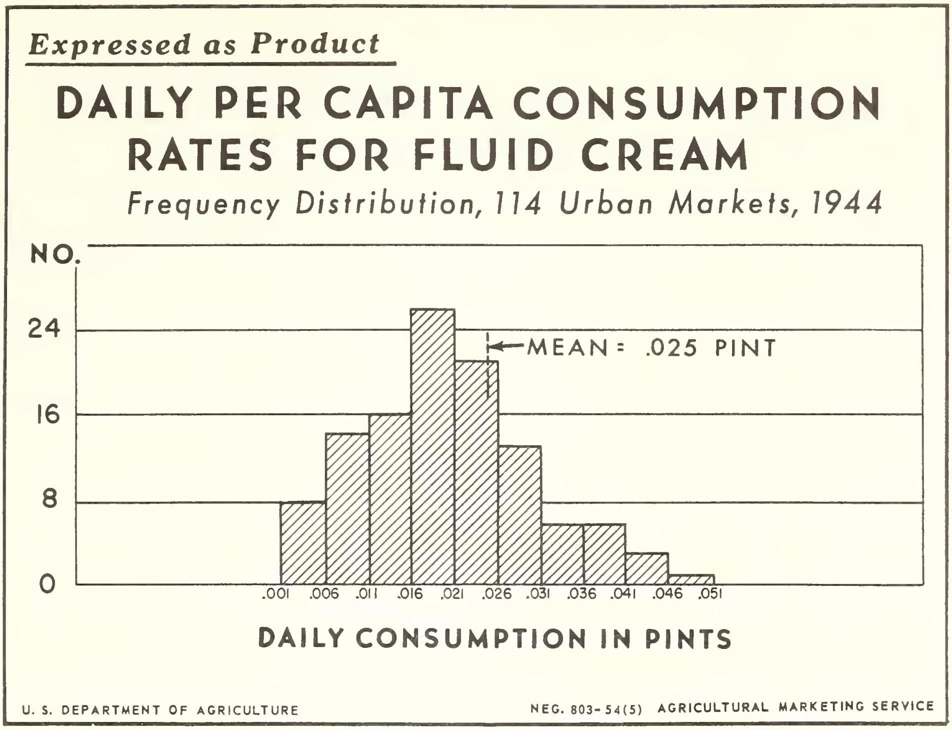


Figure 4

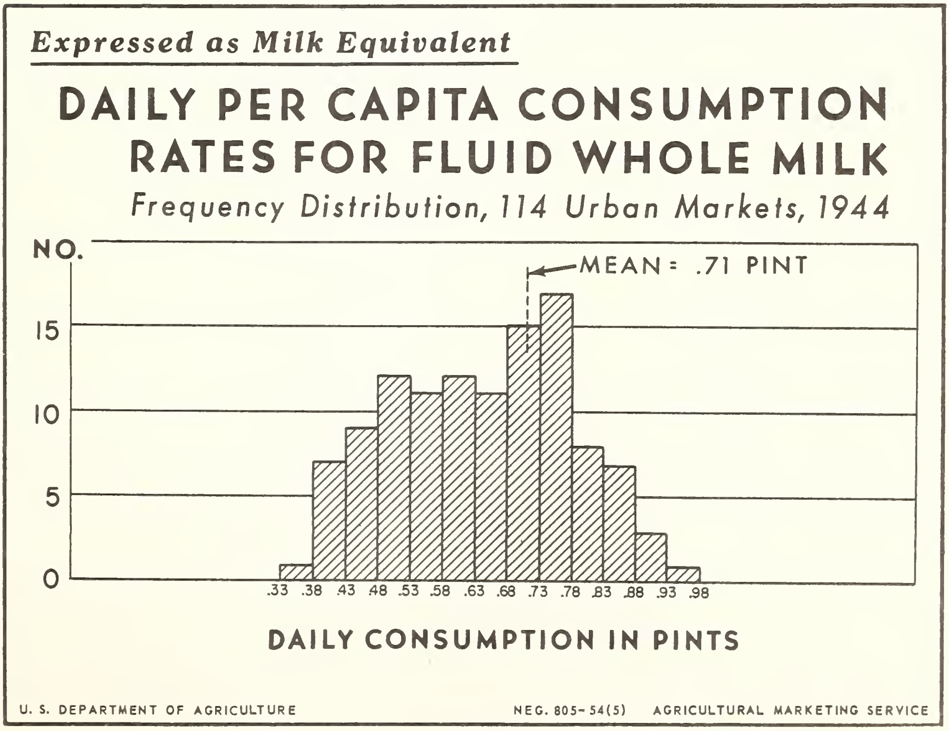


Figure 5

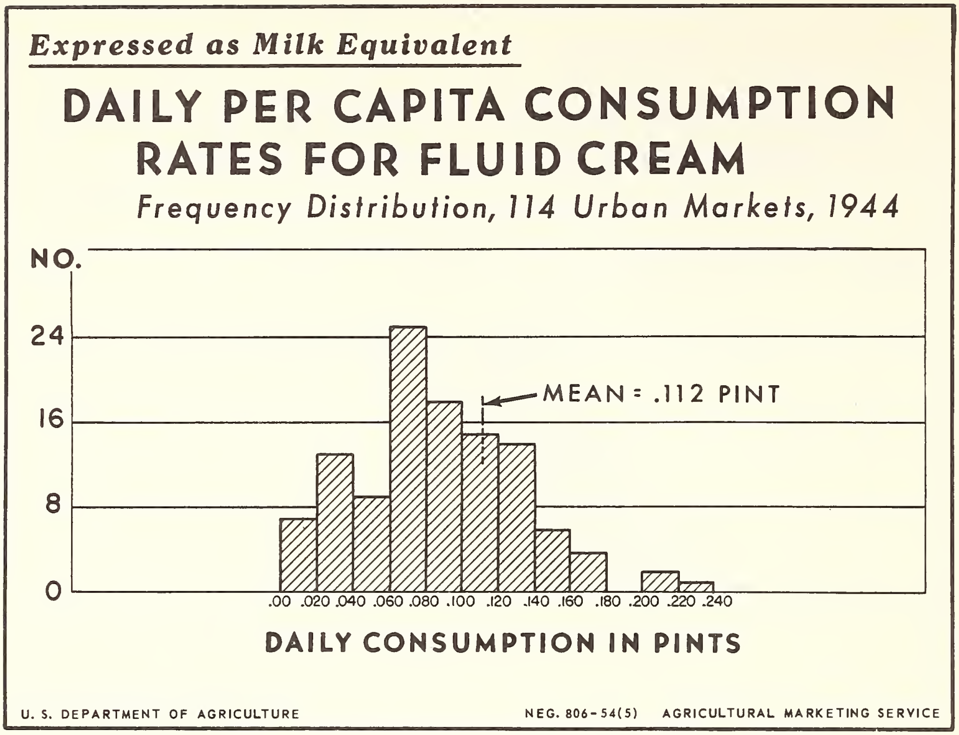


Figure 6

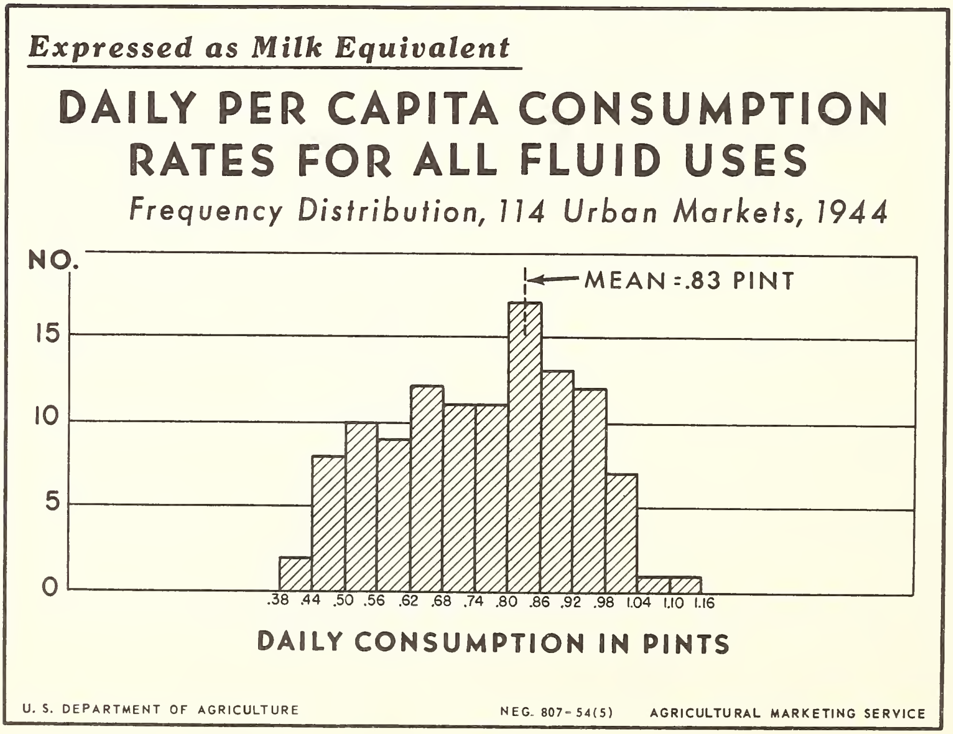


Figure 7

Table 8.-Frequency distribution of urban markets by daily per capita consumption of fluid whole milk, milk drinks, and fluid cream as product, 1944 1/

Whole milk 2/		Milk drinks 3/		Cream 4/	
Consumption	Distribution of markets	Consumption	Distribution of markets	Consumption	Distribution of markets
Pints	Number	Pints	Number	Pints	Number
0.37-0.41	2	0.006-0.020	14	0.001-0.005	8
.42- .46	8	.021- .035	20	.006- .010	14
.47- .51	9	.036- .050	37	.011- .015	16
.52- .56	10	.051- .065	23	.016- .020	26
.57- .61	10	.066- .080	7	.021- .025	21
.62- .66	10	.081- .095	5	.026- .030	13
.67- .71	16	.096- .110	1	.031- .035	6
.72- .76	22	.111- .125	5	.036- .040	6
.77- .81	10	.126- .140	0	.041- .045	3
.82- .86	8	.141- .155	0	.046- .050	1
.87- .91	6	.156- .170	1		
.92- .96	3				
Total	114		1/ 113		114

1/ Breakdown between whole milk and milk drinks not available for one market.

2/ M, weighted by population, = 0.73; σ = 0.15; σ_M = 0.014.

3/ M, weighted, = 0.043; σ = 0.028; σ_M = 0.0026.

4/ M, weighted, = 0.025; σ = 0.011; σ_M = 0.001.

Tables 8 and 9 show the basic frequency distributions which are illustrated by figures 2-7. Table 8 shows the frequency distributions of 114 markets by consumption rates of fluid whole milk, milk drinks and cream, expressed in pints of product. Table 9 shows the frequency distributions of these markets by rates of consumption of fluid whole milk, fluid cream and all fluid uses expressed in pints of milk equivalent, fat solids basis.

The distributions are of the moderately asymetrical normal types frequently seen in social science data. This is the first time, however, that such a large sample of fluid milk and cream consumption rates for different urban markets has ever been available and therefore it was decided to publish the distributions of consumption rates.

Table 9.-Frequency distribution of urban markets by daily per capita consumption of fluid whole milk, cream, and all fluid uses as milk equivalent, 1944

Whole milk 1/		Cream 2/		All fluid uses 3/	
Consumption	Distribution of markets	Consumption	Distribution of markets	Consumption	Distribution of markets
Pints	Number	Pints	Number	Pints	Number
0.33-0.37	1	0.000-0.019	7	0.38-0.43	2
.38- .42	7	.020- .039	13	.44- .49	8
.43- .47	9	.040- .059	9	.50- .55	10
.48- .52	12	.060- .079	25	.56- .61	9
.53- .57	11	.080- .099	18	.62- .67	12
.58- .62	12	.100- .119	15	.68- .73	11
.63- .67	11	.120- .139	14	.74- .79	11
.68- .72	15	.140- .159	6	.80- .85	17
.73- .77	17	.160- .179	4	.86- .91	13
.78- .82	8	.180- .199	0	.92- .97	12
.83- .87	7	.200- .219	2	.98-1.03	7
.88- .92	3	.220- .239	1	1.04-1.09	1
.93- .97	1			1.10-1.15	1
Total	114		114		114

1/ Mean, weighted by population, = 0.71 $\sigma = 0.15$; $\sigma_M = 0.014$.
2/ Mean, weighted, = 0.112; $\sigma = 0.050$; $\sigma_M = 0.0046$.
3/ Mean, weighted, = 0.83; $\sigma = 0.19$; $\sigma_M = 0.0177$.

The most important distributions are those showing consumption rates for fluid whole milk in pints of product (fig. 2) and in terms of pints of milk equivalent (fig. 5) because consumption of fluid whole milk is much greater than consumption of cream and skim-milk items. These two distributions of consumption rates for fluid whole milk are much alike. Both show marked central tendency in the form of large frequencies close to their respective averages. Both are skewed to the left, which is an unusual occurrence in social science data. This negative skewness reflects the substantial number of markets in the sample with rather low rates of consumption. The average consumption rate for each of these two distributions, weighted by population in the markets, is larger than is to be expected from inspection of the distributions. The reason for this is that the largest markets in the sample, such as New York City, Chicago, the States of New Jersey and Connecticut, Los Angeles, Detroit, Cleveland, and Philadelphia have consumption rates as high as or higher than the average for the entire sample. This handful of eight very large markets accounts for almost half of the entire population of the WFO-79 sample and about 60 percent of the total consumption of fluid whole milk in this sample.

The distributions of consumption rates for fluid cream expressed in pints of product (fig. 4) and in pints of milk equivalent (fig.6) resemble each other rather closely although the scales on the respective horizontal axes are considerably different. Both distributions have larger weighted averages than is to be expected from inspection of figures 4 and 6 and for the same reason that produced the same result in the distributions of consumption rates of fluid whole milk, viz., association of relatively high consumption rates with a small number of very large markets.

The distribution of consumption rates for skim-milk items (fig. 3) is notable chiefly for very high concentration of consumption rates close to the average for the sample. Seventy-one percent or nearly three-quarters of the 113 consumption rates in this distribution are concentrated in the three central classes which constitute only one-quarter of the total number of classes. The average consumption rate for the sample, is smaller than would be expected from inspection of figure 3 because of the association of relatively low consumption rates with a small number of very large markets. The long tail to the right shown by this distribution reflects the influence of several southern markets having relatively high rates of skim-milk consumption, chiefly in the form of buttermilk.

The distributions of consumption rates of whole milk, fluid cream, and all fluid products taken together, and expressed in terms of milk equivalent, reflect the consumption rates of these products, as modified by both the butterfat test of product sold and the butterfat test of milk receipts in the market. Where the butterfat test of the product sold is relatively low and the test of milk received in the market is relatively high, the corresponding rate of consumption expressed as milk equivalent is reduced. An illustration of this situation is the case of New Orleans which has a received-milk test of 4.48 percent butterfat and a fluid whole milk sales test of 4.00 percent. The daily consumption rate for whole milk as product in this market is 0.55 pint daily but the corresponding milk equivalent figure is 11 percent lower at 0.49 pint. (See table 11, p. 31.)

Geographic Analysis

Table 10 brings together in the nine familiar geographic divisions the sample indications of consumption. In terms of product, the sample areas in the New England division lead in consumption of fluid whole milk and are last in consumption of milk drinks. Middle Atlantic markets rank second in consumption of whole milk and next to last in consumption of milk drinks. The sample areas in the Mountain States rank third in consumption of whole milk and are tied with the Pacific Coast areas at third from the bottom in consumption of skim milk. However, Table 10.-Sample indications of daily per capita consumption of whole milk, milk drinks, and cream as products and as milk equivalents in 114 urban markets, by geographic divisions and United States, 1944

Division	Estimated sample population	Indicated daily per capita consumption						
		Product			Milk equivalent			
		Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total
	Thousands	Pints	Pints	Pints	Pints	Pints	Pints	Pints
New England	2,659	0.87	0.022	0.024	0.84	0.008	0.108	0.96
Middle Atlantic	19,678	.81	.031	.021	.81	.011	.101	.92
East North Central	14,647	.73	.045	.032	.71	.014	.151	.88
West North Central	4,235	.69	.046	.028	.65	.013	.131	.79
South Atlantic	6,144	.57	.053	.013	.55	.019	.060	.63
East South Central	2,331	.52	.091	.010	.48	.023	.043	.55
West South Central	3,274	.60	.049	.018	.55	.014	.074	.64
Mountain	761	.76	.040	.024	.72	.012	.112	.84
Pacific	7,480	.74	.040	.035	.71	.011	.137	.86
United States	61,209	.73	.043	.025	.71	.012	.112	.83

there are only three sample areas in the Mountain States and therefore the estimates for this division are not as well supported as are those for the other divisions. On a weighted-average basis, however, the three market areas included in the sample for the Mountain division--Denver, Salt Lake City, and Phoenix--accounted for about 60 percent of the population in the Mountain States in 1944 living either in metropolitan districts or in urban areas of 25,000 or more.

Pacific Coast sample areas ranked fourth in consumption of whole milk, just ahead of those in the East North Central States, and, as mentioned previously, they were tied with the Mountain States for third from the bottom in consumption of milk drinks. The sample markets in the West North Central States ranked sixth in consumption of whole milk and fourth in consumption of milk drinks. The West South Central States ranked seventh in consumption of whole milk but were third in consumption of milk drinks. The South Atlantic States ranked eighth in consumption of whole milk but second in consumption of milk drinks. To round out the picture, the markets in the East South Central States ranked last in consumption of whole milk but first in consumption of milk drinks.

The highest consumption rate for fluid cream as product occurred in the Pacific Coast States but the average butterfat test of fluid cream (or milk and cream mixtures) sold in several important Pacific Coast markets was below 15 percent. (See table 11.) The East and West North Central divisions ranked second and third, respectively, in consumption of cream. The New England and Mountain divisions were tied for fourth place in consumption of cream and following them in order were the Middle Atlantic, West South Central, South Atlantic, and East South Central divisions.

The ranking of the divisions in respect to consumption of whole milk expressed as milk equivalent is similar to the ranking of consumption of whole milk expressed as product. The rankings were changed very little, despite the fact that butterfat tests of product sold and of milk receipts affect the rates of consumption as milk equivalent in addition to the level of consumption expressed as product. The ranking of the divisions in respect to consumption of milk drinks expressed as milk equivalent is also similar to that of consumption as product. This holds true also for the rankings for consumption of cream, expressed as product and as milk equivalent.

In table 11 are shown the daily rates of consumption of fluid whole milk, milk drinks, and cream for each of the 114 areas included in this report. Rates of consumption are expressed both as product and as milk equivalent, together with the indicated butterfat tests of milk receipts in each area and in each product. To describe the contents of table 11 in detail would be too tedious. Therefore, only a few salient details are pointed out.

As markets for fluid milk are organized on a local basis it is not to be expected that they will show uniformity in butterfat test of milk receipts and butterfat test of products sold. The data in table 11, showing butterfat tests of milk receipts in the various markets and butterfat tests of products sold, bear out this expectation. Butterfat tests of milk receipts tend slightly to cluster about certain values within States but there are many exceptions. Diversity in butterfat test of products sold is even more marked than in the case of milk receipts, except for fluid cream, or milk and cream mixtures. Wartime regulations prohibited the sale to ultimate consumers of fluid cream testing above 19-percent butterfat and concentration at or just below the permitted level was considerable. The consistency in test of milk drinks is more apparent than real. As mentioned earlier, the data on butterfat test of milk drinks were weak for many of the sales areas. The consistency in tests of plain skim milk, buttermilk, and flavored milk drinks combined arises largely from statistical editing. The errors involved would be small in any case.

Consumption levels shown for the different products vary about as expected. Industrial areas in northern latitudes show relatively high consumption levels for whole milk, and in some cases for fluid cream. These areas show relatively low levels of consumption for skim and part-skim milk drinks. Conversely, most of the areas in the South show relatively low rates of consumption for whole milk and for cream but relatively high rates for milk drinks, chiefly buttermilk. Appendix tables 13 to 15 show these markets arrayed by levels of consumption for fluid whole milk, milk drinks, and cream.

Consumption of Whole Milk as Product

Within geographic divisions, consumption of the different milk products varies considerably. For example, daily per capita consumption of whole milk in Portland, Maine, was 0.96 pint as compared with 0.79 pint for Rhode Island. In the Middle Atlantic division, daily consumption of whole milk varied from 0.60 pint for the Pittsburgh, Pa., market to 0.94 pint in the Utica-Rome, N. Y., market. In the East North Central division the Tri-State market areas in Ohio, Kentucky, and West Virginia, and Terre Haute, Ind., reported consumption of whole milk at 0.60 pint and Muskegon, Mich., reported 0.88 pint. The range in the West North Central division was from 0.59 pint in Springfield, Mo., to 0.95 pint in the Duluth-Superior market. In the South Atlantic division, the range was from 0.42 pint in Savannah, Ga., to 0.71 pint in Wilmington, Del. In the East South Central division, the range was from 0.39 pint in Jackson, Miss., to 0.64 pint in Louisville, Ky. The ranges from minimum to maximum in daily consumption of whole milk were somewhat smaller in the West South Central, Mountain, and Pacific Coast divisions.

Consumption of Cream as Product

Average consumption of fluid cream per person per day for 114 markets was 0.025 pint. Considerable variation about this average both for the entire sample and also within regions is evident from the data shown in tables 2 and 5. The standard deviation for this distribution is 44 percent of the mean as compared with 21 percent for the distribution of consumption rates for whole milk. In New England, the range was from

0.023 pint daily in Manchester, N. H., to 0.028 pint in Portland, Maine. In the Middle Atlantic States, the range was from 0.013 to 0.026 pint. Consumption of cream showed the greatest variation within regions in the East North Central States, where a low of 0.009 pint in the Tri-State area contrasted with 0.043 pint in both the Chicago, Ill., and Madison, Wis., markets. At 0.015 pint, consumption was lowest in Springfield, Mo., in the West North Central region and highest at 0.041 pint in Lincoln, Nebr. For the South Atlantic area, cream used varied from 0.002 pint in Macon, Ga., to 0.028 pint in the District of Columbia. Moreover, in only 6 of the 21 markets in this region was the rate of consumption above 0.010 pint. Variation in the East South Central division was from 0.004 to 0.016 pint. In the West South Central States, the range was from 0.009 in New Orleans, La., to 0.026 in Galveston, Tex. Consumption of cream in the Mountain States varied from 0.019 to 0.028 pint and in the Pacific Coast States from 0.019 pint in Tacoma, Wash., to 0.040 pint in Los Angeles, Calif.

Milk Drinks as Product

Daily consumption of milk drinks as product averaged 0.043 pint per person for 113 markets. For the sample as a whole, the range was from 0.008 pint in New Orleans to 0.169 pint in Nashville, Tenn. In New England, per capita consumption ranged from 0.012 to 0.028 pint daily. In the Middle Atlantic States, a low of 0.010 in the Syracuse, N. Y., area contrasted with a high of 0.055 in Binghamton, N. Y. For the East North Central area, consumption of milk drinks ranged from 0.017 pint in Lansing, Mich., to 0.086 pint in both Akron, Ohio, and Evansville, Ind. In the West North Central region, the difference was from 0.018 to 0.079 pint in Des Moines, Iowa, and Springfield, Mo., respectively. Variation in the South Atlantic States was from 0.015 pint in Savannah, Ga., and Richmond, Va., to 0.125 in Atlanta, Ga. However, in only 5 of 21 markets was usage greater than 0.060 pint. Consumption in the East South Central States ranged from 0.034 to 0.169 pint. In this division, in 6 of the 9 markets represented, usage was above 0.075 pint. Consumption varied from 0.008 to 0.087 pint in the West South Central division, from 0.020 to 0.056 pint in the Mountain division, and from 0.018 to 0.047 pint in the Pacific Coast States.

Consumption of Whole Milk, Milk Drinks, and Cream as Milk Equivalent

The data in table 11 under the above headings are the result of the levels of consumption as product, qualified by the relations between the butterfat test of product and the butterfat test of milk receipts in the various markets. Where the butterfat content of the product sold is identical with that of milk receipts in the market, the fat relationship is unity and therefore no qualification of the consumption level of product occurs. This can occur, as a practical matter, only in the case of whole milk and it is rare here. Ordinarily, as the data in table 11 indicate, the butterfat content of whole milk sold is less than that of milk receipts in the market. (See appendix table 16 for details on this relationship.) Because of the involved relationships, no attempt is made to discuss the consumption data expressed as milk equivalents.

The data are included in table 11 to illustrate how the relationship between consumption rates of the fluid products and consumption rates in milk equivalent terms affects the supply side of fluid milk markets. Milk is produced by cows as whole milk. Local health authorities require, with few exceptions, that all butterfat and nonfat milk solids used in processing fluid milk and cream products must meet local fluid milk and cream inspection standards. This, in effect, means that fluid market needs for whole milk, cream, and skim milk must be met from locally approved supplies of fluid whole milk. While this situation obtains, the whole milk equivalents, on a fat-content basis, of total fluid product sales will predominate in determining fluid market needs for milk rather than the sum total of sales of separate fluid milk products.

In table 12 are shown the aggregate quantities of fluid milk and milk drinks and fluid cream, all expressed as milk equivalent, consumed by the nonfarm population in each of the individual States. Total annual consumption in each State is a product of the number of people, other than the farm population, in each State and daily per capita consumption of fluid milk and cream. New York State had the greatest annual consumption followed by Pennsylvania and California. These three States had 28.4 percent of the total annual consumption of fluid milk and cream in the United States in 1944.

Table 11.—Butterfat test, by products, and daily per capita consumption of whole milk, milk drinks, and cream as product and as milk equivalent, by markets, United States, 1944

Market	Estimated population	Butterfat test				Daily per capita consumption						
		Milk receipts	Product			Product			Milk equivalent			
			Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Thousands	Percent	Percent	Percent	Percent	Pints	Pints	Pints	Pints	Pints	Pints	Pints
New England												
Maine												
Portland	118	4.10	3.88	1.25	19.05	0.96	0.023	0.028	0.90	0.007	0.130	1.04
New Hampshire												
Manchester	79	3.88	3.75	1.10	19.28	.84	.012	.023	.81	.003	.113	.93
Connecticut												
Entire State	1,705	3.89	3.80	1.34	17.00	.90	.023	.024	.88	.008	.104	.99
Rhode Island												
Entire State	757	3.89	3.75	1.25	18.00	.79	.021	.024	.76	.007	.112	.88
Middle Atlantic												
New York												
New York City Mktg. Area	8,250	3.72	3.72	1.10	18.50	.89	—	.026	.89	—	.124	1.01
Niagara Frontier	892	3.74	3.74	1.70	18.50	.75	.037	.018	.75	.017	.090	.86
Albany-Schenec.-Troy	413	3.92	3.85	1.66	18.50	.86	.021	.016	.84	.009	.076	.93
Rochester	402	3.80	3.70	1.75	18.50	.76	.040	.015	.74	.018	.074	.83
Syracuse	264	3.88	3.75	1.70	18.50	.82	.010	.013	.79	.004	.062	.86
Utica-Rome	192	3.65	3.60	1.70	18.50	.94	.026	.013	.93	.012	.066	1.01
Binghamton	149	3.78	3.75	1.66	18.50	.84	.055	.018	.83	.024	.088	.94
New Jersey												
Entire State	4,095	3.83	3.83	1.10	18.50	.82	.018	.019	.82	.005	.091	.92
Pennsylvania												
Philadelphia	2,380	3.92	3.80	1.34	18.40	.74	.040	.020	.72	.014	.091	.82
Pittsburgh	1,778	3.99	3.72	1.15	17.26	.60	.043	.017	.56	.012	.072	.64
Allentown-Easton-Beth.	305	3.66	3.55	1.78	17.65	.71	.043	.013	.71	.021	.063	.79
Harrisburg	173	3.71	3.70	1.30	18.82	.77	.050	.016	.77	.019	.081	.87
Reading	158	3.64	3.63	2.22	18.65	.68	.013	.015	.68	.008	.062	.75
Lancaster	117	3.90	3.86	1.70	18.20	.76	.044	.015	.76	.018	.070	.84
York	110	3.97	3.93	2.25	17.44	.76	.034	.017	.76	.019	.075	.85
East North Central												
Ohio												
Cleveland	1,297	3.87	3.85	1.10	18.06	.76	.053	.034	.75	.015	.159	.93
Cincinnati	797	4.08	3.76	1.10	18.80	.61	.064	.016	.56	.017	.074	.65
Columbus	398	4.10	3.99	1.40	17.93	.68	.066	.023	.66	.023	.101	.78
Akron	377	3.77	3.72	1.10	18.76	.82	.086	.029	.81	.025	.144	.98
Youngstown	371	4.03	3.91	1.10	17.47	.67	.051	.018	.65	.014	.078	.74
Toledo	358	3.80	3.68	1.21	12.83	.67	.041	.039	.65	.013	.131	.80
Dayton	343	4.06	3.86	1.10	17.69	.73	.056	.023	.69	.015	.100	.80
Tri-State	147	4.08	3.88	1.10	17.82	.60	.059	.009	.57	.016	.039	.62
Indiana												
Indianapolis	489	4.20	3.83	1.17	18.29	.72	.069	.019	.66	.019	.083	.76
St. Joseph County	165	4.01	3.64	1.10	16.11	.67	.044	.022	.61	.012	.088	.71
Evansville	150	4.10	3.73	1.11	18.57	.68	.086	.011	.61	.023	.049	.68
Fort Wayne	130	3.95	3.72	1.10	18.02	.70	.061	.017	.66	.017	.078	.76
Terre Haute	84	4.23	3.91	1.10	18.13	.60	.050	.016	.56	.013	.069	.64

Continued -

Table 11.—Butterfat test, by products, and daily per capita consumption of whole milk, milk drinks, and cream as product and as milk equivalent, by markets, United States, 1944—Continued

Market	Estimated population	Butterfat test				Daily per capita consumption						
		Milk receipts	Product			Product			Milk equivalent			
			Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Thousands	Percent	Percent	Percent	Percent	Pints	Pints	Pints	Pints	Pints	Pints	Pints
East North Central (Contd.)												
Illinois												
Chicago	4,648	3.60	3.55	1.40	16.93	0.74	0.045	0.043	0.73	0.017	0.202	0.95
Quad cities	182	3.67	3.58	1.10	14.40	.71	.049	.027	.69	.015	.106	.81
Springfield	84	4.00	3.65	1.10	13.86	.68	.054	.038	.62	.015	.132	.77
Decatur	67	4.08	3.60	1.10	16.30	.75	.064	.033	.66	.017	.132	.81
Michigan												
Detroit	2,578	3.93	3.73	1.05	18.56	.74	.021	.036	.71	.006	.170	.88
Grand Rapids	201	3.99	3.78	1.10	18.33	.79	.030	.024	.75	.008	.110	.87
Flint	191	3.73	3.68	1.10	18.09	.79	.034	.023	.78	.010	.112	.90
Saginaw-Bay City	153	3.62	3.53	1.10	18.71	.72	.043	.020	.71	.013	.103	.82
Lansing	123	3.73	3.59	1.00	18.95	.87	.017	.024	.84	.005	.122	.97
Muskegon	92	3.95	3.77	1.10	18.80	.88	.033	.021	.84	.009	.100	.94
Kalamazoo	82	4.08	3.78	1.10	18.99	.77	.039	.021	.71	.011	.098	.82
Battle Creek	70	3.87	3.73	1.10	18.52	.80	.036	.025	.77	.010	.119	.90
Wisconsin												
Milwaukee	850	3.68	3.65	1.15	18.40	.78	.028	.024	.77	.009	.120	.90
Racine-Kenosha	129	3.68	3.63	1.10	17.80	.83	.060	.022	.82	.018	.106	.94
Madison	91	3.60	3.58	1.15	18.55	.87	.044	.043	.87	.014	.222	1.10
West North Central												
Minnesota												
Minneapolis-St. Paul	894	3.81	3.62	1.00	17.70	.83	.050	.046	.79	.013	.214	1.01
Duluth-Superior	138	4.15	3.64	1.00	19.76	.95	.031	.038	.83	.008	.178	1.02
Iowa												
Des Moines	179	3.90	3.82	1.10	17.52	.71	.018	.028	.69	.005	.126	.82
Sioux City	78	3.66	3.55	1.10	16.57	.76	.038	.029	.74	.011	.131	.88
Cedar Rapids	69	3.75	3.72	1.10	17.42	.81	.030	.026	.80	.009	.123	.93
Waterloo	62	3.80	3.64	1.10	15.15	.76	.037	.035	.73	.011	.140	.88
Missouri												
St. Louis	1,428	3.77	3.51	1.15	18.45	.61	.052	.018	.56	.016	.088	.67
Greater Kansas City	703	3.93	3.74	1.15	18.26	.59	.043	.022	.56	.013	.102	.68
St. Joseph	74	3.93	3.70	1.10	18.16	.59	.035	.016	.56	.010	.074	.64
Springfield	66	4.11	3.94	1.20	17.98	.59	.079	.015	.56	.023	.066	.65
Nebraska												
Omaha-Council Bluffs	281	3.74	3.74	1.10	18.47	.76	.040	.034	.76	.012	.168	.94
Lincoln	86	3.88	3.61	1.10	16.34	.74	.043	.041	.69	.012	.173	.87
Kansas												
Wichita	177	3.61	3.46	1.15	14.53	.64	.045	.027	.61	.014	.109	.73
South Atlantic												
Delaware												
Wilmington	199	3.98	3.95	1.10	19.05	.71	.028	.015	.70	.008	.072	.78
Greater Washington, D.C.	1,235	3.95	3.74	1.27	18.94	.69	.049	.028	.65	.016	.134	.80
Maryland												
Baltimore	1,210	3.96	3.96	2.31	19.00	.64	.060	.011	.64	.035	.053	.73

Continued -

Table 11.—Butterfat test, by products, and daily per capita consumption of whole milk, milk drinks, and cream as product and as milk equivalent, by markets, United States, 1944—Continued

Market	Estimated population	Butterfat test				Daily per capita consumption						
		Milk receipts	Product			Product			Milk equivalent			
			Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Thousands	Percent	Percent	Percent	Percent	Pints	Pints	Pints	Pints	Pints	Pints	Pints
South Atlantic (Contd.)												
Virginia												
Norfolk—Portsmouth—Newport News	596	4.07	3.85	1.10	19.00	0.43	0.017	0.003	0.41	0.005	0.014	0.43
Richmond	277	4.08	3.82	1.15	19.08	.54	.015	.010	.51	.014	.047	.57
Roanoke	97	4.00	3.84	1.10	18.90	.49	.092	.008	.48	.025	.038	.54
West Virginia												
Wheeling	161	4.19	3.79	1.10	16.17	.49	.052	.015	.45	.014	.058	.52
Charleston	159	4.11	3.81	1.10	18.15	.48	.060	.010	.44	.016	.044	.50
North Carolina												
Charlotte	109	4.20	4.10	1.10	18.67	.49	.039	.007	.48	.010	.031	.52
Winston-Salem	80	4.27	3.94	1.10	17.24	.54	.120	.005	.50	.031	.020	.55
Durham	74	4.17	3.92	1.10	18.27	.51	.055	.005	.48	.015	.022	.52
Asheville	65	4.25	4.06	1.61	17.25	.59	.043	.009	.56	.016	.037	.62
South Carolina												
Charleston	166	4.20	3.90	1.10	18.41	.45	.039	.003	.42	.010	.013	.44
Columbia	113	3.97	3.97	1.14	18.57	.46	.046	.008	.46	.013	.037	.51
Georgia												
Atlanta	463	4.27	4.01	1.15	18.04	.45	.125	.008	.43	.034	.034	.49
Savannah	160	3.99	3.98	1.05	18.95	.42	.015	.004	.42	.004	.019	.44
Columbus	120	4.25	4.02	1.20	19.00	.43	.098	.004	.40	.028	.018	.45
Macon	96	4.27	4.09	1.15	18.08	.43	.051	.002	.41	.014	.008	.43
Florida												
Miami	287	4.08	3.94	1.15	18.83	.62	.045	.021	.60	.013	.097	.70
Tampa—St. Petersburg	239	4.12	4.03	1.25	12.77	.59	.041	.011	.58	.012	.034	.62
Jacksonville	238	4.17	4.03	1.15	18.44	.48	.063	.008	.46	.017	.035	.52
East South Central												
Kentucky												
Louisville	504	4.05	3.86	1.00	18.53	.64	.046	.012	.60	.011	.055	.67
Mississippi												
Jackson	84	4.42	4.16	1.05	18.04	.39	.053	.016	.37	.013	.065	.45
Tennessee												
Memphis	366	4.39	4.20	1.10	18.05	.52	.116	.011	.50	.029	.045	.57
Nashville	256	4.29	3.80	1.10	18.58	.53	.169	.016	.47	.043	.069	.58
Knoxville	210	4.44	4.02	1.10	19.14	.56	.120	.007	.51	.030	.030	.57
Chattanooga	189	4.33	4.12	1.00	18.29	.50	.113	.010	.47	.026	.042	.54
Alabama												
Birmingham	422	4.33	4.03	1.25	19.00	.41	.089	.006	.38	.026	.026	.44
Mobile	192	4.32	4.04	1.10	19.00	.48	.034	.004	.45	.009	.018	.48
Montgomery	108	4.30	4.03	1.15	18.99	.43	.076	.007	.40	.020	.031	.46
West South Central												
Arkansas												
Little Rock	137	4.27	4.00	1.10	18.67	.50	.076	.018	.47	.020	.079	.57

Continued -

Table 11.—Butterfat test, by products, and daily per capita consumption of whole milk, milk drinks, and cream as product and as milk equivalent, by markets, United States, 1944—Continued

Market	Estimated population	Butterfat test				Daily per capita consumption						
		Milk receipts	Product			Product			Milk equivalent			
			Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Thousands	Percent	Percent	Percent	Percent	Pints	Pints	Pints	Pints	Pints	Pints	Pints
West South Central (Contd)												
Louisiana												
New Orleans	611	4.48	4.00	1.50	20.32	0.55	0.008	0.009	0.49	0.003	0.041	0.54
Shreveport	110	4.50	4.08	1.10	18.59	.55	.078	.016	.50	.019	.066	.58
Oklahoma												
Oklahoma City	237	4.09	3.77	1.10	17.84	.63	.064	.021	.58	.017	.092	.69
Tulsa	210	4.10	3.72	1.00	18.27	.63	.065	.018	.57	.016	.080	.66
Texas												
Houston	582	4.23	4.11	1.57	17.99	.62	.057	.018	.61	.021	.077	.70
Dallas	420	4.40	3.64	1.10	18.59	.69	.087	.023	.57	.022	.097	.69
San Antonio	346	4.28	3.85	1.25	14.50	.54	.017	.024	.49	.005	.081	.57
Fort Worth	257	4.38	3.93	1.10	17.59	.65	.075	.019	.58	.019	.076	.68
El Paso	131	3.88	3.62	1.10	18.50	.63	.026	.013	.59	.007	.062	.66
Corpus Christi	86	4.35	3.84	1.10	18.10	.56	.029	.017	.50	.007	.071	.57
Galveston	86	4.40	4.01	1.10	18.33	.55	.018	.026	.50	.004	.108	.61
Amarillo	61	4.25	3.92	1.20	16.97	.54	.065	.022	.60	.018	.088	.70
Mountain												
Colorado												
Denver	415	3.74	3.39	1.05	16.82	.70	.045	.028	.64	.013	.126	.77
Arizona												
Phoenix	126	3.72	3.72	1.18	18.50	.72	.056	.019	.72	.018	.094	.83
Utah												
Salt Lake City	220	3.72	3.66	1.25	16.85	.89	.020	.021	.87	.007	.095	.98
Pacific												
Washington												
Seattle	545	4.17	3.99	1.00	18.87	.81	.038	.033	.77	.009	.149	.93
Spokane	149	4.15	3.64	1.05	18.92	.75	.036	.029	.66	.009	.132	.80
Tacoma	191	4.09	3.95	1.05	18.97	.72	.034	.019	.69	.009	.088	.79
Oregon												
Portland	511	4.33	3.83	1.00	14.86	.78	.040	.037	.69	.009	.127	.83
California												
Los Angeles	3,603	3.67	3.63	1.10	13.28	.73	.047	.040	.73	.014	.145	.88
San Francisco Bay area	1,927	3.95	3.68	1.25	17.17	.72	.029	.033	.67	.009	.143	.82
San Diego	388	3.83	3.74	1.25	12.55	.70	.037	.027	.68	.012	.088	.78
San Jose	166	3.80	3.73	1.05	16.38	.75	.018	.015	.74	.005	.065	.81

1/ Computed from unrounded figures.

Table 12.-Estimated consumption of fluid milk and cream as milk equivalent, by nonfarm population, by States and divisions, 1944 1/

State and Division	Milk and milk drinks	Cream	All fluid products
	Mil.lb.	Mil.lb.	Mil.lb.
Maine	230	32	262
New Hampshire	134	18	153
Vermont	84	12	96
Massachusetts	1,434	176	1,610
Rhode Island	229	35	264
Connecticut	604	76	680
New England	2,715	349	3,065
New York	4,283	574	4,857
New Jersey	1,343	159	1,502
Pennsylvania	2,662	369	3,031
Middle Atlantic	8,288	1,102	9,390
Ohio	1,810	343	2,153
Indiana	857	157	1,015
Illinois	2,158	570	2,728
Michigan	1,516	316	1,831
Wisconsin	779	133	913
East North Central	7,120	1,519	8,640
Minnesota	601	174	775
Iowa	470	94	564
Missouri	686	119	805
North Dakota	85	19	104
South Dakota	90	23	113
Nebraska	245	60	305
Kansas	366	55	421
West North Central	2,543	544	3,087
Delaware	73	9	82
Maryland	546	56	602
District of Columbia	247	51	298
Virginia	545	69	614
West Virginia	356	52	407
North Carolina	563	44	608
South Carolina	298	25	323
Georgia	496	41	537
Florida	586	59	645
South Atlantic	3,710	406	4,116
Kentucky	463	62	524
Tennessee	527	50	577
Alabama	433	42	475
Mississippi	231	35	266
East South Central	1,654	189	1,842
Arkansas	251	37	288
Louisiana	477	62	539
Oklahoma	358	54	412
Texas	1,441	213	1,654
West South Central	2,527	366	2,893
Montana	108	20	128
Idaho	117	16	133
Wyoming	57	11	68
Colorado	278	47	324
New Mexico	106	20	126
Arizona	150	19	169
Utah	186	27	213
Nevada	42	8	50
Mountain	1,044	168	1,211
Washington	633	117	750
Oregon	358	53	411
California	2,506	508	3,014
Pacific	3,497	678	4,175
UNITED STATES	33,098	5,321	38,419

1/ Because of adjustments in rounding, the horizontal totals may differ slightly from the sum of the parts.

Table 13.–Array of 114 urban markets by daily per capita consumption of fluid whole milk, United States, 1944

Market	Whole milk
	Pints
Portland, Maine	0.96
Duluth-Superior, Minn., Wis.	.95
Utica-Rome, N. Y.	.94
Connecticut, entire State	.90
New York City mktg. area, N. Y.	.89
Salt Lake City, Utah	.89
Muskegon, Mich.	.88
Lansing, Mich.	.87
Madison, Wis.	.87
Albany-Schen.-Troy, N. Y.	.86
Binghamton, N. Y.	.84
Manchester, N. H.	.84
Racine-Kenosha, Wis.	.83
Minneapolis-St. Paul, Minn.	.83
Syracuse, N. Y.	.82
New Jersey, entire State	.82
Akron, Ohio.	.82
Cedar Rapids, Iowa	.81
Seattle, Wash.	.81
Battle Creek, Mich.	.80
Grand Rapids, Mich.	.79
Flint, Mich.	.79
Rhode Island, entire State	.79
Portland, Oreg.	.78
Milwaukee, Wis.	.78
Harrisburg, Pa.	.77
Kalamazoo, Mich.	.77
Sioux City, Ia.	.76
Omaha-Council Bluffs, Nebr.-Iowa	.76
York, Pa.	.76
Waterloo, Iowa	.76
Lancaster, Pa.	.76
Rochester, N. Y.	.76
Cleveland, Ohio	.76
Niagara Frontier, N. Y.	.75
Spokane, Wash.	.75
San Jose, Calif.	.75
Decatur, Ill.	.75
Detroit, Mich.	.74
Chicago, Ill.	0.74
Philadelphia, Pa.	.74
Lincoln, Nebr.	.74
Los Angeles, Calif.	.73
Dayton, Ohio	.73
Saginaw-Bay City, Mich.	.72
Indianapolis, Ind.	.72
San Francisco Bay area, Calif.	.72
Phoenix, Ariz.	.72
Tacoma, Wash.	.72
Allentown-Easton-Bethlehem, Pa.	.71
Quad cities, Ill.-Iowa	.71
Wilmington, Del.	.71
Des Moines, Iowa	.71
Fort Wayne, Ind.	.70
Denver, Colo.	.70
San Diego, Calif.	.70
District of Columbia	.69
Dallas, Tex.	.69
Springfield, Ill.	.68
Reading, Pa.	.68
Columbus, Ohio	.68
Evansville, Ind.	.68
Toledo, Ohio	.67
St. Joseph County, Ind.	.67
Youngstown, Ohio	.67
Fort Worth, Tex.	.65
Amarillo, Tex.	.64
Baltimore, Md.	.64
Wichita, Kans.	.64
Louisville, Ky.	.64
Oklahoma City, Okla.	.63
El Paso, Tex.	.63
Tulsa, Okla.	.63
Houston, Tex.	.62
Miami, Fla.	.62
Cincinnati, Ohio	.61
St. Louis, Mo.	.61
Terre Haute, Ind.	.60
Pittsburgh, Pa.	.60
Tri-State, Ohio, Ky., W. Va.	.60
St. Joseph, Mo.	0.59
Greater Kansas City, Mo.-Kan.	.59
Asheville, N. C.	.59
Tampa-St. Petersburg, Fla.	.59
Springfield, Mo.	.59
Knoxville, Tenn.	.56
Corpus Christi, Tex.	.56
New Orleans, La.	.55
Shreveport, La.	.55
Galveston, Tex.	.55
Winston-Salem, N. C.	.54
Richmond, Va.	.54
San Antonio, Tex.	.54
Nashville, Tenn.	.53
Memphis, Tenn.	.52
Durham, N. C.	.51
Little Rock, Ark.	.50
Chattanooga, Tenn.	.50
Roanoke, Va.	.49
Wheeling, W. Va.	.49
Charlotte, N. C.	.49
Mobile, Ala.	.48
Jacksonville, Fla.	.48
Charleston, W. Va.	.48
Columbia, S. C.	.46
Atlanta, Ga.	.45
Charleston, S. C.	.45
Norfolk-Portsmouth-Newport News, Va.	.43
Montgomery, Ala.	.43
Macon, Ga.	.43
Columbus, Ga.	.43
Savannah, Ga.	.42
Birmingham, Ala.	.41
Jackson, Miss.	.39

Table 14.—Array of 113 urban markets by average daily consumption of milk drinks per person, United States, 1944

Market	Milk drinks
	Pints
Nashville, Tenn.	0.169
Atlanta, Ga.	.125
Winston-Salem, N. C.	.120
Knoxville, Tenn.	.120
Memphis, Tenn.	.116
Chattanooga, Tenn.	.113
Columbus, Ga.	.098
Roanoke, Va.	.092
Birmingham, Ala.	.089
Dallas, Tex.	.087
Akron, Ohio	.086
Evansville, Ind.	.086
Springfield, Mo.	.079
Shreveport, La.	.078
Montgomery, Ala.	.076
Little Rock, Ark.	.076
Fort Worth, Tex.	.075
Indianapolis, Ind.	.069
Columbus, Ohio	.066
Tulsa, Okla.	.065
Amarillo, Tex.	.065
Decatur, Ill.	.064
Oklahoma City, Okla.	.064
Cincinnati, Ohio	.064
Jacksonville, Fla.	.063
Fort Wayne, Ind.	.061
Racine-Kenosha, Wis.	.060
Baltimore, Md.	.060
Charleston, W. Va.	.060
Tri-State, Ohio, Ky., W. Va.	.059
Houston, Tex.	.057
Dayton, Ohio	.056
Phoenix, Ariz.	.056
Binghamton, N. Y.	.055
Durham, N. C.	.055
Springfield, Ill.	.054
Cleveland, Ohio	.053
Jackson, Miss.	.053
St. Louis, Mo.	.052
Wheeling, W. Va.	.052
Macon, Ga.	.051
Youngstown, Ohio	.051
Minneapolis-St. Paul, Minn.	0.050
Harrisburg, Pa.	.050
Terre Haute, Ind.	.050
Quad cities, Ill.-Iowa	.049
District of Columbia	.049
Los Angeles, Calif.	.047
Pittsburgh, Pa.	.046
Columbia, S. C.	.046
Louisville, Ky.	.046
Chicago, Ill.	.045
Wichita, Kans.	.045
Miami, Fla.	.045
Denver, Colo.	.045
Lancaster, Pa.	.044
St. Joseph County, Ind.	.044
Madison, Wis.	.044
Allentown-Easton-Bethlehem, Pa.	.043
Saginaw-Bay City, Mich.	.043
Greater Kansas City, Mo.-Kans.	.043
Lincoln, Nebr.	.043
Asheville, N. C.	.043
Toledo, Ohio	.041
Tampa-St. Petersburg, Fla.	.041
Rochester, N. Y.	.040
Omaha-Council Bluffs, Nebr.-Iowa	.040
Portland, Oreg.	.040
Kalamazoo, Mich.	.039
Charlotte, N. C.	.039
Charleston, S. C.	.039
Sioux City, Iowa	.038
Seattle, Wash.	.038
Niagara Frontier, N. Y.	.037
Waterloo, Iowa	.037
San Diego, Calif.	.037
Battle Creek, Mich.	.036
Spokane, Wash.	.036
St. Joseph, Mo.	0.035
York, Pa.	.034
Flint, Mich.	.034
Mobile, Ala.	.034
Tacoma, Wash.	.034
Muskegon, Mich.	.033
Duluth-Superior, Minn.-Wis.	.031
Philadelphia, Pa.	.030
Grand Rapids, Mich.	.030
Cedar Rapids, Iowa	.030
Corpus Christi, Tex.	.029
San Francisco Bay area, Calif.	.029
Milwaukee, Wis.	.028
Wilmington, Del.	.028
Utica-Rome, N. Y.	.026
El Paso, Tex.	.026
Portland, Me.	.023
Connecticut, entire State	.023
Rhode Island, entire State	.021
Albany-Schen.-Troy, N. Y.	.021
Detroit, Mich.	.021
Salt Lake City, Utah	.020
New Jersey, entire State	.018
Des Moines, Iowa	.018
Galveston, Tex.	.018
San Jose, Calif.	.018
Lansing, Mich.	.017
Norfolk-Portsmouth-Newport News, Va.	.017
San Antonio, Tex.	.017
Richmond, Va.	.015
Savannah, Ga.	.015
Reading, Pa.	.013
Manchester, N. H.	.012
Syracuse, N. Y.	.010
New Orleans, La.	.008

Table 15.—Array of 114 urban markets by average daily consumption of fluid cream per person, United States, 1944

Market	Cream	Market	Cream	Market	Cream
	Pints		Pints		Pints
Minneapolis, Minn.	0.046	Manchester, N. H.	0.023	Pittsburgh, Pa.	0.015
Chicago, Ill.	.043	Columbus, Ohio	.023	Lancaster, Pa.	.015
Madison, Wis.	.043	Dayton, Ohio	.023	Reading, Pa.	.015
Lincoln, Nebr.	.041	Flint, Mich.	.023	Springfield, Mo.	.015
Los Angeles, Calif.	.040	Dallas, Tex.	.023	Wilmington, Del.	.015
Toledo, Ohio	.039	St. Joseph County, Ind.	.022	Wheeling, W. Va.	.015
Springfield, Ill.	.038	Racine-Kenosha, Wis.	.022	San Jose, Calif.	.015
Duluth-Superior, Minn.-Wis.	.038	Greater Kansas City, Mo.-Kans.	.022	Utica-Rome, N. Y.	.013
Portland, Oreg.	.037	Amarillo, Tex.	.022	Syracuse, N. Y.	.013
Detroit, Mich.	.036	Kalamazoo, Mich.	.021	Allentown-Easton-Bethlehem, Pa.	.013
Waterloo, Iowa	.035	Muskegon, Mich.	.021	El Paso, Tex.	.013
Cleveland, Ohio	.034	Miami, Fla.	.021	Louisville, Ky.	.012
Omaha-Council Bluffs, Nebr.-Iowa	.034	Oklahoma City, Okla.	.021	Evansville, Ind.	.011
Decatur, Ill.	.033	Salt Lake City, Utah	.021	Baltimore, Md.	.011
Seattle, Wash.	.033	Saginaw-Bay City, Mich.	.020	Tampa-St. Petersburg, Fla.	.011
San Francisco Bay area, Calif.	.033	New Jersey, entire State	.019	Memphis, Tenn.	.011
Akron, Ohio	.029	Philadelphia, Pa.	.019	Richmond, Va.	.010
Sioux City, Iowa	.029	Indianapolis, Ind.	.019	Charleston, W. Va.	.010
Spokane, Wash.	.029	Fort Worth, Tex.	.019	Chattanooga, Tenn.	.010
Portland, Maine	.028	Phoenix, Ariz.	.019	Tri-State, Ohio, Ky., W. Va.	.009
Des Moines, Iowa	.028	Tacoma, Wash.	.019	Asheville, N. C.	.009
District of Columbia	.028	Binghamton, N. Y.	.018	New Orleans, La.	.009
Denver, Colo.	.028	Niagara Frontier, N. Y.	.018	Roanoke, Va.	.008
Quad cities, Ill.-Iowa	.027	Youngstown, Ohio	.018	Columbia, S. C.	.008
Wichita, Kans.	.027	St. Louis, Mo.	.018	Atlanta, Ga.	.008
San Diego, Calif.	.027	Little Rock, Ark.	.018	Jacksonville, Fla.	.008
Cedar Rapids, Iowa	.026	Tulsa, Okla.	.018	Charlotte, N. C.	.007
Galveston, Tex.	.026	Houston, Tex.	.018	Knoxville, Tenn.	.007
New York City marketing area, N. Y.	.026	York, Pa.	.017	Montgomery, Ala.	.007
Battle Creek, Mich.	.025	Fort Wayne, Ind.	.017	Birmingham, Ala.	.006
Connecticut, entire State	.024	Corpus Christi, Tex.	.017	Durham, N. C.	.005
Rhode Island, entire State	.024	Albany-Schen.-Troy, N. Y.	.016	Winston-Salem, N. C.	.005
Grand Rapids, Mich.	.024	Harrisburg, Pa.	.016	Savannah, Ga.	.004
Lansing, Mich.	.024	Terre Haute, Ind.	.016	Columbus, Ga.	.004
Milwaukee, Wis.	.024	Cincinnati, Ohio	.016	Mobile, Ala.	.004
San Antonio, Tex.	.024	St. Joseph, Mo.	.016	Norfolk-Portsmouth-Newport News, Va.	.003
		Jackson, Miss.	.016	Charleston, S. C.	.003
		Nashville, Tenn.	.016	Macon, Ga.	.002
		Shreveport, La.	.016		
		Rochester, N. Y.	.015		

Table 16.-Butterfat test of sales and receipts of whole milk and ratio of test of sales to test of receipts, 114 urban markets, United States, 1944

Market	Butterfat test of whole milk		
	Sales	Receipts	Ratio of sales to receipts
	Pct.	Pct.	
New England			
Maine			
Portland	3.88	4.10	0.95
New Hampshire			
Manchester	3.75	3.88	.97
Connecticut			
Entire State	3.80	3.89	.98
Rhode Island			
Entire State	3.75	3.89	.96
Middle Atlantic			
New York			
N. Y. C. mktg. area	3.72	3.72	1.00
Niagara Frontier	3.74	3.74	1.00
Utica-Rome	3.60	3.65	.99
Albany-Schen.-Troy	3.85	3.92	.98
Binghamton	3.75	3.78	.99
Syracuse	3.75	3.88	.97
Rochester	3.70	3.80	.97
New Jersey			
Entire State	3.83	3.83	1.00
Pennsylvania			
Philadelphia	3.80	3.92	.97
Pittsburgh	3.72	3.99	.93
Allentown-Easton-Bethlehem	3.65	3.66	1.00
Lancaster	3.86	3.90	.99
Reading	3.63	3.64	1.00
York	3.93	3.97	.99
Harrisburg	3.70	3.71	1.00
East North Central			
Ohio			
Cleveland	3.85	3.87	.99
Cincinnati	3.76	4.08	.92
Columbus	3.99	4.10	.97
Toledo	3.68	3.80	.97
Dayton	3.86	4.06	.95
Akron	3.72	3.77	.99
Youngstown	3.91	4.03	.97
Tri-State, Ohio, Ky., W. Va.	3.88	4.08	.95
Indiana			
Indianapolis	3.83	4.20	.91
Evansville	3.73	4.10	.91
St. Joseph County	3.64	4.01	.91
Ft. Wayne	3.72	3.95	.94
Terre Haute	3.91	4.23	.92
Illinois			
Chicago	3.55	3.60	0.99
Springfield	3.65	4.00	.91
Quad cities, Illinois-Iowa	3.58	3.67	.98
Decatur	3.60	4.08	.88
Michigan			
Detroit	3.73	3.93	.95
Grand Rapids	3.78	3.99	.95
Flint	3.68	3.73	.99
Saginaw-Bay City	3.53	3.62	.98
Lansing	3.59	3.73	.96
Muskegon	3.77	3.95	.95
Kalamazoo	3.78	4.08	.93
Battle Creek	3.73	3.87	.96
Wisconsin			
Milwaukee	3.65	3.68	.99
Racine-Kenosha	3.63	3.68	.99
Madison	3.58	3.60	.99
West North Central			
Minnesota			
Minneapolis-St. Paul,	3.62	3.81	.95
Duluth-Superior, Minnesota-Wisconsin	3.64	4.15	.88
Iowa			
Des Moines	3.82	3.90	.98
Sioux City	3.55	3.66	.97
Cedar Rapids	3.72	3.75	.99
Waterloo	3.64	3.80	.96
Missouri			
St. Louis	3.51	3.77	.93
Greater Kansas City, Missouri-Kansas	3.74	3.93	.95
St. Joseph	3.70	3.93	.94
Springfield	3.94	4.11	.96
Nebraska			
Omaha-Council Bluffs, Nebraska-Iowa	3.74	3.74	1.00
Lincoln	3.61	3.88	.93
Kansas			
Wichita	3.46	3.61	.96

Continued -

Table 16.-Butterfat test of sales and receipts of whole milk and ratio of test of sales to test of receipts, 114 urban markets, United States, 1944--Continued

Market	Butterfat test of whole milk		
	Sales	Receipts	Ratio of sales to receipts
	Pct.	Pct.	
South Atlantic			
Delaware			
Wilmington	3.95	3.98	0.99
District of Columbia	3.74	3.95	.95
Maryland			
Baltimore	3.96	3.96	1.00
Virginia			
Norfolk-Portsmouth-Newport News	3.85	4.07	.95
Richmond	3.82	4.08	.94
Roanoke	3.84	4.00	.96
West Virginia			
Wheeling	3.79	4.19	.90
Charleston	3.81	4.11	.93
North Carolina			
Charlotte	4.10	4.20	.98
Winston-Salem	3.94	4.27	.92
Durham	3.92	4.17	.94
Asheville	4.06	4.25	.96
South Carolina			
Charleston	3.90	4.20	.93
Columbia	3.97	3.97	1.00
Georgia			
Atlanta	4.01	4.27	.94
Savannah	3.98	3.99	1.00
Columbus	4.02	4.25	.95
Macon	4.09	4.27	.96
Florida			
Miami	3.94	4.08	.97
Tampa-St. Petersburg	4.03	4.12	.98
Jacksonville	4.03	4.17	.97
East South Central			
Kentucky			
Louisville	3.86	4.05	.95
Mississippi			
Jackson	4.16	4.42	.94
Tennessee			
Memphis	4.20	4.39	.96
Nashville	3.80	4.29	.89
Knoxville	4.02	4.44	.91
Chattanooga	4.12	4.33	.95
Alabama			
Birmingham	4.03	4.33	.93
Mobile	4.04	4.32	.94
Montgomery	4.03	4.30	.94

Market	Butterfat test of whole milk		
	Sales	Receipts	Ratio of sales to receipts
	Pct.	Pct.	
West South Central			
Arkansas			
Little Rock	4.00	4.27	0.94
Louisiana			
New Orleans	4.00	4.48	.89
Shreveport	4.08	4.50	.91
Oklahoma			
Oklahoma City	3.77	4.09	.92
Tulsa	3.72	4.10	.91
Texas			
Houston	4.11	4.23	.97
Dallas	3.64	4.40	.83
San Antonio	3.85	4.28	.90
Fort Worth	3.93	4.38	.90
El Paso	3.62	3.88	.93
Corpus Christi	3.84	4.35	.88
Galveston	4.01	4.40	.91
Amarillo	3.92	4.25	.92
Mountain			
Colorado			
Denver	3.39	3.74	.91
Arizona			
Phoenix	3.72	3.72	1.00
Utah			
Salt Lake City	3.66	3.72	.98
Pacific			
Washington			
Seattle	3.99	4.17	.96
Spokane	3.64	4.15	.88
Tacoma	3.95	4.09	.97
Oregon			
Portland	3.83	4.33	.88
California			
San Francisco Bay area	3.68	3.95	.93
San Diego	3.74	3.83	.98
Los Angeles	3.63	3.67	.99
San Jose	3.73	3.80	.98

Table 17.–Butterfat tests, sales and milk equivalents, by products, by markets, United States, 1944

Market	Butterfat test				Sales						
					Product			Milk equivalent			
	Milk receipts	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Percent	Percent	Percent	Percent	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
New England											
Maine											
Portland	4.10	3.88	1.25	19.05	44,480	1,058	1,299	42,042	322	6,031	48,395
New Hampshire											
Manchester	3.88	3.75	1.10	19.28	25,947	352	703	25,078	100	3,493	28,670
Connecticut											
Entire State	3.89	3.80	1.34	17.00	603,000	15,700	15,990	589,049	5,393	69,880	664,322
Rhode Island											
Entire State	3.89	3.75	1.25	18.00	234,126	6,255	7,622	225,700	2,010	33,212	260,887
Middle Atlantic											
New York											
New York City	3.72	3.72	2/	18.50	2,886,682	2/	110,381	2,886,682	2/	402,499	3,289,181
Niagara Frontier	3.74	3.74	1.70	18.50	263,705	13,005	6,317	263,705	5,911	31,246	300,862
Utica-Rome	3.65	3.60	1.70	18.50	71,462	1,992	953	70,483	928	4,830	76,241
Albany-Schenect.-Troy	3.92	3.85	1.66	18.50	139,687	3,840	2,643	137,192	1,626	12,472	151,290
Binghamton	3.78	3.75	1.66	18.50	49,310	3,229	1,054	48,854	1,415	5,153	55,422
Syracuse	3.88	3.75	1.70	18.50	85,100	992	1,324	82,206	435	6,312	88,952
Rochester	3.80	3.70	1.75	18.50	120,028	6,264	2,403	116,869	2,885	11,700	131,454
New Jersey											
Entire State	3.83	3.83	1.10	18.50	1,321,138	29,281	30,225	1,321,138	8,410	145,998	1,475,546
Pennsylvania											
Philadelphia	3.92	3.80	1.34	18.40	692,308	37,456	18,180	671,115	12,804	85,334	769,252
Pittsburgh	3.99	3.72	1.15	17.26	419,000	30,235	11,697	390,437	8,714	50,599	449,750
Allentown-Easton-Beth.	3.66	3.65	1.78	17.65	85,180	5,119	1,529	84,993	2,491	7,376	94,860
Lancaster	3.90	3.86	1.70	18.20	34,993	2,035	690	34,670	888	3,225	38,783
Reading	3.64	3.63	2.22	18.65	42,503	829	732	42,410	506	3,751	46,667
York	3.97	3.93	2.25	17.44	33,030	1,485	741	32,697	841	3,254	36,793
Harrisburg	3.71	3.70	1.30	18.82	52,413	3,405	1,088	52,272	1,193	5,520	58,985
East North Central											
Ohio											
Cleveland	3.87	3.85	1.10	18.06	386,229	26,859	17,184	384,831	7,638	80,237	472,707
Cincinnati	4.08	3.76	1.10	18.80	191,100	19,969	5,073	176,112	5,384	23,375	204,871
Columbus	4.10	3.99	1.40	17.93	105,714	10,334	3,522	102,878	3,524	15,404	121,806
Toledo	3.80	3.68	1.21	12.83	94,838	5,759	5,429	91,697	1,832	18,308	111,837
Dayton	4.06	3.86	1.10	17.69	98,267	7,551	3,058	93,309	2,044	13,315	108,668
Akron	3.77	3.72	1.10	18.76	121,335	12,772	4,264	119,535	3,723	21,195	144,453
Youngstown	4.03	3.91	1.10	17.47	97,661	7,402	2,701	94,755	2,019	11,701	108,475
Tri-State	4.08	3.88	1.10	17.82	34,611	3,432	495	32,914	926	2,163	36,003

Continued -

Table 17.—Butterfat tests, sales and milk equivalents, by products, by markets, United States, 1944—Continued

Market	Butterfat test				Sales						
					Product			Milk equivalent			
	Milk receipts	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Percent	Percent	Percent	Percent	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Indiana											
Indianapolis	4.20	3.84	1.17	18.29	138,874	13,242	3,615	126,805	3,695	15,742	146,243
Evansville	4.10	3.73	1.11	18.57	39,922	5,105	635	36,275	1,376	2,871	40,521
St. Joseph County	4.01	3.64	1.10	16.11	43,686	2,880	1,433	39,662	790	5,760	46,213
Fort Wayne	3,95	3.72	1.10	18.02	36,114	3,123	864	34,011	870	3,942	38,823
Terre Haute	4.23	3.91	1.10	18.13	19,958	1,656	531	18,448	431	2,275	21,154
Illinois											
Chicago	3.60	3.55	1.40	16.93	1,355,834	82,771	78,230	1,334,014	32,130	367,426	1,733,570
Springfield	4.00	3.65	1.10	13.86	22,632	1,801	1,257	20,652	495	4,355	25,502
Quad cities	3.67	3.58	1.10	14.40	47,947	3,392	1,915	46,771	1,011	7,516	55,298
Decatur	4.08	3.60	1.10	16.30	19,736	1,685	860	17,428	454	3,435	21,318
Michigan											
Detroit	3.93	3.73	1.05	18.56	755,729	21,012	36,100	717,077	5,514	170,440	893,131
Grand Rapids	3.99	3.78	1.10	18.33	62,804	2,367	1,927	59,526	653	8,863	69,043
Flint	3.73	3.68	1.10	18.09	59,449	2,593	1,716	58,652	765	8,325	67,741
Saginaw-Bay City	3.62	3.53	1.10	18.71	43,531	2,587	1,193	42,520	787	6,173	49,480
Lansing	3.73	3.59	1.00	18.95	42,117	816	1,139	40,559	219	5,786	46,563
Muskegon	3.95	3.77	1.10	18.80	31,547	1,190	757	30,085	331	3,601	34,018
Kalamazoo	4.08	3.78	1.10	18.99	24,779	1,274	691	22,939	344	3,218	26,501
Battle Creek	3.87	3.73	1.10	18.52	21,964	1,000	684	21,158	284	3,271	24,714
Wisconsin											
Milwaukee	3.68	3.65	1.15	18.40	261,158	9,390	8,006	259,029	2,934	40,029	301,992
Racine-Kenosha	3.63	3.63	1.10	17.80	42,305	3,060	1,133	41,741	915	5,483	48,139
Madison	3.60	3.58	1.15	18.55	30,980	1,564	1,517	30,851	500	7,823	39,174
West North Central											
Minnesota											
Minneapolis-St. Paul	3.81	3.62	1.00	17.70	291,173	17,668	16,249	276,652	4,637	75,489	356,778
Duluth-Superior	4.15	3.64	1.00	19.76	51,425	1,706	2,042	45,105	411	9,691	55,207
Iowa											
Des Moines	3.90	3.82	1.10	17.52	49,666	1,288	1,990	48,698	364	8,946	58,007
Sioux City	3.66	3.55	1.10	16.57	23,599	1,175	910	22,864	353	4,114	27,331
Cedar Rapids	3.75	3.72	1.10	17.42	21,859	820	715	21,673	241	3,322	25,235
Waterloo	3.80	3.64	1.10	15.15	18,731	920	849	17,942	266	3,383	21,592
Missouri											
St. Louis	3.77	3.51	1.15	18.45	341,041	29,307	10,121	316,991	8,935	49,496	375,421
Greater Kansas City	3.93	3.74	1.15	18.26	163,803	11,818	6,184	155,926	3,458	28,741	188,125
St. Joseph	3.93	3.70	1.10	18.16	17,249	1,016	476	16,240	284	2,201	18,725
Springfield	4.11	3.94	1.20	17.98	15,129	2,026	376	14,495	591	1,547	16,733
Nebraska											
Omaha-Council Bluffs	3.74	3.74	1.10	18.47	84,530	4,425	3,712	84,439	1,302	18,338	104,079
Lincoln	3.88	3.61	1.10	16.34	25,000	1,459	1,390	23,260	413	5,354	29,528

Continued -

Table 17.—Butterfat tests, sales and milk equivalents, by products, by markets, United States, 1944—Continued

Market	Butterfat test				Sales						
					Product			Milk equivalent			
	Milk receipts	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Percent	Percent	Percent	Percent	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Kansas											
Wichita	3.61	3.46	1.15	14.63	44,476	3,142	1,882	42,544	1,000	7,620	51,164
South Atlantic											
Delaware											
Wilmington	3.98	3.95	1.10	19.05	55,427	2,228	1,209	55,009	616	5,787	61,412
District of Columbia	3.95	3.74	1.27	18.94	335,014	23,771	13,503	317,203	7,619	64,754	389,576
Maryland											
Baltimore	3.96	3.96	2.31	19.00	304,238	28,579	5,433	303,854	16,628	26,036	346,519
Virginia											
Norfolk—Portsmouth—Newport News	4.07	3.85	1.10	19.00	101,265	3,964	722	95,791	1,071	3,373	100,235
Richmond	4.08	3.82	1.15	19.08	59,262	5,505	1,063	55,472	1,551	4,968	61,991
Roanoke	4.00	3.84	1.10	18.90	18,793	3,484	307	18,064	958	1,452	20,475
West Virginia											
Wheeling	4.19	3.79	1.10	16.17	31,149	3,256	918	28,180	856	3,546	32,581
Charleston	4.11	3.81	1.10	18.15	29,966	3,770	598	27,750	1,009	2,639	31,398
North Carolina											
Charlotte	4.20	4.10	1.10	18.67	20,899	1,678	286	20,377	439	1,272	22,089
Winston—Salem	4.27	3.94	1.10	17.24	17,204	3,774	173	15,875	972	697	17,544
Durham	4.17	3.92	1.10	18.27	14,874	1,596	152	13,969	421	667	15,057
Asheville	4.25	4.06	1.61	17.25	15,078	1,091	230	14,401	413	935	15,748
South Carolina											
Charleston	4.20	3.90	1.10	18.41	29,138	2,537	184	27,071	665	807	28,543
Columbia	3.97	3.97	1.14	18.57	20,368	2,028	356	20,352	583	1,665	22,600
Georgia											
Atlanta	4.27	4.01	1.15	18.04	82,810	22,746	1,501	77,767	6,126	6,344	90,237
Savannah	3.99	3.98	1.05	18.95	26,408	953	236	26,355	251	1,120	27,726
Columbus	4.25	4.02	1.20	19.00	20,184	4,629	178	19,092	1,307	804	21,203
Macon	4.27	4.09	1.15	18.08	16,185	1,910	71	15,525	515	303	16,342
Florida											
Miami	4.08	3.94	1.15	18.83	69,463	5,026	2,403	67,082	1,417	11,079	79,577
Tampa—St. Petersburg	4.12	4.03	1.25	12.77	55,484	3,895	1,024	54,273	1,181	3,170	58,624
Jacksonville	4.17	4.03	1.15	18.44	44,891	5,883	722	43,384	1,622	3,192	48,199
East South Central											
Kentucky											
Louisville	4.05	3.86	1.00	18.53	125,868	9,179	2,390	119,963	2,266	10,937	133,167
Mississippi											
Jackson	4.42	4.16	1.05	18.04	13,063	1,768	521	12,320	420	2,130	14,871
Tennessee											
Memphis	4.39	4.20	1.10	18.05	75,067	16,713	1,579	71,768	4,186	6,490	82,443
Nashville	4.29	3.80	1.10	18.58	53,373	17,036	1,623	47,327	4,368	7,032	58,728

Continued -

Table 17.—Butterfat tests, sales and milk equivalents, by products, by markets, United States, 1944—Continued

Market	Butterfat test				Sales						
					Product			Milk equivalent			
	Milk receipts	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Percent	Percent	Percent	Percent	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
Tennessee (Contd.)											
Knoxville	4.44	4.02	1.10	19.14	46,684	9,889	588	42,220	2,447	2,531	47,199
Chattanooga	4.33	4.12	1.00	18.29	36,960	8,388	735	35,192	1,938	3,109	40,239
Alabama											
Birmingham	4.33	4.03	1.25	19.00	68,495	14,741	1,015	63,808	4,260	4,459	72,526
Mobile	4.32	4.04	1.10	19.00	36,625	2,571	311	34,243	655	1,367	36,264
Montgomery	4.30	4.03	1.15	18.99	18,372	3,216	319	17,219	860	1,409	19,488
West South Central											
Arkansas											
Little Rock	4.27	4.00	1.10	18.67	27,302	4,106	988	25,557	1,057	4,318	30,933
Louisiana											
New Orleans	4.48	4.00	1.50	20.32	132,460	1,894	2,227	118,268	634	10,117	129,020
Shreveport	4.50	4.08	1.10	18.59	23,819	3,388	696	21,580	828	2,876	25,284
Oklahoma											
Oklahoma City	4.09	3.77	1.10	17.84	59,102	5,993	1,940	54,478	1,612	8,462	64,552
Tulsa	4.10	3.72	1.00	18.27	51,877	5,397	1,464	46,961	1,315	6,517	54,792
Texas											
Houston	4.23	4.11	1.57	17.99	142,634	13,126	4,087	138,685	4,879	17,397	160,962
Dallas	4.40	3.64	1.10	18.59	113,744	14,336	3,739	94,097	3,584	15,793	113,474
San Antonio	4.28	3.85	1.25	14.50	73,671	2,328	3,268	66,321	680	11,073	78,074
Fort Worth	4.38	3.93	1.10	17.59	65,994	7,566	1,963	59,227	1,900	7,887	69,015
El Paso	3.88	3.62	1.10	18.50	30,274	1,325	677	30,261	375	3,225	33,861
Corpus Christi	4.35	3.84	1.10	18.10	18,991	998	577	16,769	252	2,399	19,420
Galveston	4.40	4.01	1.10	18.33	18,505	601	877	16,856	150	3,652	20,659
Amarillo	4.25	3.92	1.20	16.97	15,563	1,577	540	14,376	445	2,156	16,977
Mountain											
Colorado											
Denver	3.74	3.39	1.05	16.82	114,312	7,382	4,594	103,703	2,073	20,667	126,444
Arizona											
Phoenix	3.72	3.72	1.18	18.50	35,530	2,776	928	35,530	881	4,614	41,025
Utah											
Salt Lake City	3.72	3.66	1.25	16.85	76,884	1,712	1,841	75,644	575	8,340	84,559
Pacific											
Washington											
Seattle	4.17	3.99	1.00	18.87	173,318	8,134	7,067	165,712	1,951	31,981	199,644
Tacoma	4.09	3.95	1.05	18.97	53,754	2,536	1,465	51,863	650	6,786	59,300
Spokane	4.15	3.64	1.05	18.92	44,137	2,141	1,686	38,723	542	7,687	46,952
Oregon											
Portland	4.33	3.83	1.00	14.86	157,082	8,006	7,531	138,798	1,849	25,849	166,496

Continued -

Table 17.—Butterfat tests, sales and milk equivalents, by products, by markets, United States, 1944—Continued

Market	Butterfat test				Sales						
					Product			Milk equivalent			
	Milk receipts	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Whole milk	Milk drinks	Cream	Total 1/
	Percent	Percent	Percent	Percent	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
California											
Los Angeles	3.67	3.63	1.10	13.28	1,039,147	67,146	56,729	1,029,509	20,147	205,578	1,255,235
San Francisco Bay area	3.95	3.68	1.25	17.17	547,276	21,901	25,034	509,867	6,931	108,833	625,631
San Diego	3.83	3.74	1.25	12.55	106,580	5,641	4,150	103,995	1,839	13,580	119,414
San Jose	3.80	3.73	1.05	16.38	49,075	1,147	963	48,132	317	4,150	52,599

1/ Computed from unrounded figures.
2/ Not available.

Table 18 - Daily per capita consumption of milk products and percentage distribution by products, 114 urban markets, United States, 1944

Market	Daily per capita consumption			
	Total milk products	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
New England				
Maine				
Portland	1.01	94.9	2.3	2.8
New Hampshire				
Manchester	.87	96.0	1.4	2.6
Connecticut				
Entire State	.95	95.1	2.4	2.5
Rhode Island				
Entire State	.83	94.6	2.5	2.9
Middle Atlantic				
New York				
New York City mktg. area	.92	1/97.2	2/	2.8
Niagara Frontier	.81	93.0	4.6	2.4
Utica-Rome	.98	96.0	2.6	1.4
Albany-Schenec.-Troy	.90	95.9	2.3	1.8
Binghamton	.91	92.0	6.0	2.0
Syracuse	.84	97.3	1.2	1.5
Rochester	.81	93.3	4.9	1.8
New Jersey				
Entire State	.86	95.7	2.1	2.2
Pennsylvania				
Philadelphia	.80	92.5	5.0	2.5
Pittsburgh	.66	90.9	6.5	2.6
Allentown-Easton-Beth.	.76	92.7	5.6	1.7
Lancaster	.82	92.8	5.4	1.8
Reading	.71	96.1	1.8	2.1
York	.82	93.7	4.2	2.1
Harrisburg	.84	92.1	6.0	1.9
East North Central				
Ohio				
Cleveland	0.84	89.7	6.3	4.0
Cincinnati	.69	88.4	9.3	2.3
Columbus	.76	88.4	8.6	3.0
Toledo	.75	89.4	5.4	5.2
Dayton	.80	90.1	7.0	2.9
Akron	.93	87.5	9.4	3.1
Youngstown	.74	90.7	6.9	2.4
Tri-State, Ohio, Ky., W. Va.	.67	89.7	8.9	1.4
Indiana				
Indianapolis	.81	89.2	8.5	2.3
Evansville	.77	87.5	11.1	1.4
St. Joseph County	.74	91.0	6.0	3.0
Fort Wayne	.78	90.0	7.8	2.2
Terre Haute	.67	90.1	7.5	2.4
Illinois				
Chicago	.83	89.4	5.4	5.2
Springfield	.78	88.1	7.0	4.9
Quad cities, Ill.-Ia.	.78	90.4	6.2	3.4
Decatur	.84	88.5	7.6	3.9
Michigan				
Detroit	.80	92.9	2.6	4.5
Grand Rapids	.85	93.7	3.5	2.8
Flint	.85	93.3	4.0	2.7
Saginaw-Bay City	.79	92.0	5.5	2.5
Lansing	.91	95.5	1.9	2.6
Muskegon	.93	94.2	3.5	2.3
Kalamazoo	.83	92.8	4.7	2.5
Battle Creek	.86	92.9	4.2	2.9

Continued -

Table 18 - Daily per capita consumption of milk products and percentage distribution by products, 114 urban markets, United States, 1944 - Continued

Market	Daily per capita consumption			
	Total milk products	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
Wisconsin				
Milwaukee	0.83	93.7	3.4	2.9
Racine-Kenosha	.91	91.0	6.6	2.4
Madison	.96	90.9	4.6	4.5
West North Central				
Minnesota				
Minneapolis	.92	89.6	5.4	5.0
Duluth-Superior, Minn.-Wis.	1.02	93.2	3.1	3.7
Iowa				
Des Moines	.75	93.9	2.4	3.7
Sioux City	.83	91.9	4.6	3.5
Cedar Rapids	.86	93.5	3.5	3.0
Waterloo	.83	91.4	4.4	4.2
Missouri				
St. Louis	.68	89.6	7.7	2.7
Greater Kansas City, Mo.-Kans.	.66	90.2	6.5	3.3
St. Joseph	.64	92.1	5.4	2.5
Springfield	.68	86.2	11.6	2.2
Nebraska				
Omaha-Council Bluffs, Nebr.-Iowa	.84	91.1	4.8	4.1
Lincoln	.82	89.8	5.2	5.0
Kansas				
Wichita	.71	89.9	6.3	3.8
South Atlantic				
Delaware				
Wilmington	.75	94.3	3.7	2.0
District of Columbia	0.77	89.9	6.4	3.7
Maryland				
Baltimore	.71	90.0	8.5	1.5
Virginia				
N'flk.-Ports.-Newport News	.45	95.5	3.8	.7
Richmond	.57	95.6	2.6	1.8
Roanoke	.59	83.2	15.5	1.3
West Virginia				
Wheeling	.56	88.0	9.3	2.7
Charleston	.55	87.3	10.9	1.8
North Carolina				
Charlotte	.54	91.4	7.3	1.3
Winston-Salem	.67	81.4	17.9	.7
Durham	.57	89.5	9.6	.9
Asheville	.64	91.9	6.7	1.4
South Carolina				
Charleston	.49	91.4	8.0	.6
Columbia	.51	89.4	9.0	1.6
Georgia				
Atlanta	.59	77.3	21.3	1.4
Savannah	.44	95.7	3.4	.9
Columbus	.53	80.7	18.5	.8
Macon	.48	89.0	10.6	.4
Florida				
Miami	.68	90.3	6.6	3.1
Tampa-St. Petersburg	.64	91.9	6.4	1.7
Jacksonville	.55	87.1	11.4	1.5
East South Central				
Kentucky				
Louisville	.69	91.7	6.6	1.7

Continued -

Table 18 - Daily per capita consumption of milk products and percentage distribution by products, 114 urban markets, United States, 1944 - Continued

Market	Daily per capita consumption			
	Total milk products	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
Mississippi				
Jackson	0.46	85.1	11.4	3.5
Tennessee				
Memphis	.65	80.4	17.9	1.7
Nashville	.72	74.2	23.6	2.2
Knoxville	.69	81.7	17.3	1.0
Chattanooga	.62	80.2	18.2	1.6
Alabama				
Birmingham	.51	81.3	17.5	1.2
Mobile	.52	92.7	6.5	.8
Montgomery	.52	83.8	14.8	1.4
West South Central				
Arkansas				
Little Rock	.60	84.3	12.7	3.0
Louisiana				
New Orleans	.57	97.0	1.4	1.6
Shreveport	.64	85.4	12.1	2.5
Oklahoma				
Oklahoma City	.72	88.2	8.9	2.9
Tulsa	.71	88.4	9.1	2.5
Texas				
Houston	.70	89.2	8.2	2.6
Dallas	.80	86.2	10.9	2.9
San Antonio	.58	93.0	2.9	4.1
Fort Worth	.75	87.4	10.1	2.5
Texas (continued)				
El Paso	0.67	94.2	3.9	1.9
Corpus Christi	.61	92.4	4.8	2.8
Galveston	.59	92.6	3.0	4.4
Amarillo	.73	88.1	8.9	3.0
Mountain				
Colorado				
Denver	.77	90.6	5.8	3.6
Arizona				
Phoenix	.79	90.5	7.1	2.4
Utah				
Salt Lake City	.93	95.5	2.2	2.3
Pacific				
Washington				
Seattle	.88	91.9	4.3	3.8
Tacoma	.77	93.1	4.4	2.5
Spokane	.82	92.0	4.4	3.6
Oregon				
Portland	.86	91.0	4.7	4.3
California				
Los Angeles	.82	89.4	5.7	4.9
San Francisco Bay area	.78	92.1	3.7	4.2
San Diego	.76	91.7	4.8	3.5
San Jose	.78	95.8	2.3	1.9

1/ Milk drinks included.
2/ Not available separately.

Table 19 - Daily per capita consumption as milk equivalent and percentage distribution by products, 114 urban markets, United States, 1944

Market	Daily per capita consumption			
	Total milk equivalent	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
New England				
Maine				
Portland	1.04	86.8	0.7	12.5
New Hampshire				
Manchester	.93	87.5	.3	12.2
Connecticut				
Entire State	.99	88.7	.8	10.5
Rhode Island				
Entire State	.88	86.4	.8	12.8
Middle Atlantic				
New York				
New York City mktg. area	1.01	1/87.8	2/	12.2
Niagara Frontier	.86	87.5	2.0	10.5
Utica-Rome	1.01	92.3	1.2	6.5
Albany-Schenec.-Troy	.93	90.8	1.0	8.2
Binghamton	.94	88.2	2.5	9.3
Syracuse	.86	92.3	.5	7.2
Rochester	.83	88.9	2.2	8.9
New Jersey				
Entire State	.92	89.6	.5	9.9
Pennsylvania				
Philadelphia	.82	87.2	1.7	11.1
Pittsburgh	.64	86.9	1.9	11.2
Allentown-Easton-Bethlehem	.79	89.3	2.7	8.0
Lancaster	.84	89.6	2.1	8.3
Reading	.75	90.6	1.1	8.3
York	.85	89.0	2.2	8.8
Harrisburg	.87	88.5	2.2	9.3
East North Central				
Ohio				
Cleveland	0.93	81.3	1.6	17.1
Cincinnati	.65	86.1	2.6	11.3
Columbus	.78	84.2	2.9	12.9
Toledo	.80	81.9	1.6	16.5
Dayton	.80	85.7	1.9	12.4
Akron	.98	82.6	2.6	14.8
Youngstown	.74	87.6	1.9	10.5
Tri-State	.62	91.2	2.6	6.2
Indiana				
Indianapolis	.76	86.6	2.5	10.9
Evansville	.68	89.4	3.4	7.2
St. Joseph County	.71	85.9	1.7	12.4
Fort Wayne	.76	87.5	2.2	10.3
Terre Haute	.64	87.2	2.0	10.8
Illinois				
Chicago	.95	76.9	1.8	21.3
Springfield	.77	81.0	1.9	17.1
Quad cities, Ill., Ia.	.81	85.2	1.8	13.0
Decatur	.81	81.6	2.1	16.3
Michigan				
Detroit	.88	80.0	.7	19.3
Grand Rapids	.87	86.5	.9	12.6
Flint	.90	86.5	1.1	12.4
Saginaw-Bay City	.82	85.9	1.6	12.5
Lansing	.97	86.9	.5	12.6
Muskegon	.94	88.4	1.0	10.6
Kalamazoo	.82	86.7	1.3	12.0
Battle Creek	.90	85.6	1.1	13.3

Continued -

Table 19 - Daily per capita consumption as milk equivalent and percentage distribution by products, 114 urban markets, United States, 1944 - Continued

Market	Daily per capita consumption			
	Total milk equivalent	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
Wisconsin				
Milwaukee	0.90	85.7	1.0	13.3
Racine-Kenosha	.94	86.9	1.9	11.2
Madison	1.10	78.6	1.3	20.1
West North Central				
Minnesota				
Minneapolis-St. Paul	1.01	77.6	1.3	21.1
Duluth-Superior, Minn.-Wis.	1.02	81.7	.8	17.5
Iowa				
Des Moines	.82	84.1	.6	15.3
Sioux City	.88	84.0	1.2	14.8
Cedar Rapids	.93	85.8	1.0	13.2
Waterloo	.88	82.9	1.2	15.9
Missouri				
St. Louis	.67	84.4	2.4	13.2
Greater Kansas City, Mo.-Kans.	.68	83.1	1.9	15.0
St. Joseph	.64	86.9	1.6	11.5
Springfield	.65	86.4	3.5	10.1
Nebraska				
Omaha-Council Bluffs, Nebr.-Iowa	.94	80.9	1.3	17.8
Lincoln	.87	78.8	1.4	19.8
Kansas				
Wichita	.73	83.2	1.9	14.9
South Atlantic				
Delaware				
Wilmington	.78	89.8	1.0	9.2
District of Columbia	.80	81.3	2.0	16.7
Maryland				
Baltimore	.73	87.9	4.8	7.3
Virginia				
N'flk.-Ports.-Newport News	.43	95.5	1.2	3.3
Richmond	.57	89.3	2.5	8.2
Roanoke	.54	88.4	4.6	7.0
West Virginia				
Wheeling	.52	86.1	2.7	11.2
Charleston	.50	88.1	3.2	8.7
North Carolina				
Charlotte	.52	92.1	1.9	6.0
Winston-Salem	.55	90.8	5.6	3.6
Durham	.52	92.9	2.9	4.2
Asheville	.62	91.4	2.6	6.0
South Atlantic				
South Carolina				
Charleston	.44	94.7	2.3	3.0
Columbia	.51	90.1	2.6	7.3
Georgia				
Atlanta	.49	86.2	6.9	6.9
Savannah	.44	94.8	.9	4.3
Columbus	.45	89.8	6.2	4.0
Macon	.43	95.0	3.2	1.8
Florida				
Miami	.70	84.4	1.8	13.8
Tampa-St. Petersburg	.62	92.6	1.9	5.5
Jacksonville	.52	89.9	3.3	6.8

Continued -

Table 19 - Daily per capita consumption as milk equivalent and percentage distribution by products, 114 urban markets, United States, 1944 - Continued

Market	Daily per capita consumption			
	Total milk equivalent	Percentage distribution		
		Whole milk	Milk drinks	Cream
	Pints	Pct.	Pct.	Pct.
East South Central				
Kentucky				
Louisville	0.67	90.2	1.6	8.2
Mississippi				
Jackson	.45	82.7	2.9	14.4
Tennessee				
Memphis	.57	87.0	5.1	7.9
Nashville	.58	80.7	7.4	11.9
Knoxville	.57	89.4	5.3	5.3
Chattanooga	.54	87.4	4.8	7.8
Alabama				
Birmingham	.44	88.2	5.9	5.9
Mobile	.48	94.3	1.9	3.8
Montgomery	.46	88.8	4.4	6.8
West South Central				
Arkansas				
Little Rock	.57	82.7	3.5	13.8
Louisiana				
New Orleans	.54	91.8	.6	7.6
Shreveport	.58	85.4	3.3	11.3
Oklahoma				
Oklahoma City	.69	84.3	2.4	13.3
Tulsa	.66	85.6	2.4	12.0
Texas				
Houston	.70	86.1	3.0	10.9
Dallas	.69	82.7	3.2	14.1
San Antonio	.57	85.0	.9	14.1
Texas (continued)				
Fort Worth	0.68	86.0	2.8	16.2
El Paso	.66	89.4	1.1	9.5
Corpus Christi	.57	86.4	1.2	12.4
Galveston	.61	81.7	.7	17.6
Amarillo	.70	84.9	2.6	12.5
Mountain				
Colorado				
Denver	.77	82.0	1.7	16.3
Arizona				
Phoenix	.83	86.4	2.2	11.4
Utah				
Salt Lake City	.98	89.6	.7	9.7
Pacific				
Washington				
Seattle	.93	83.0	1.0	16.0
Tacoma	.79	87.7	1.1	11.2
Spokane	.80	82.4	1.1	16.5
Oregon				
Portland	.83	83.5	1.1	15.4
California				
Los Angeles	.88	82.0	1.6	16.4
San Francisco Bay area	.82	81.6	1.1	17.3
San Diego	.78	87.2	1.5	11.3
San Jose	.81	91.3	.6	8.1

1/ Milk drinks included.
2/ Milk drinks not listed separately.

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